

Quick reference Integrated Version

SUPER MODULAR MULTI



MiNi-SUPER MODULAR MULTI



SUPER HEAT RECOVERY MULTI (2 Series)



SMMS
SUPER MODULAR MULTI SYSTEM



SHRM
SUPER HEAT RECOVERY MULTI



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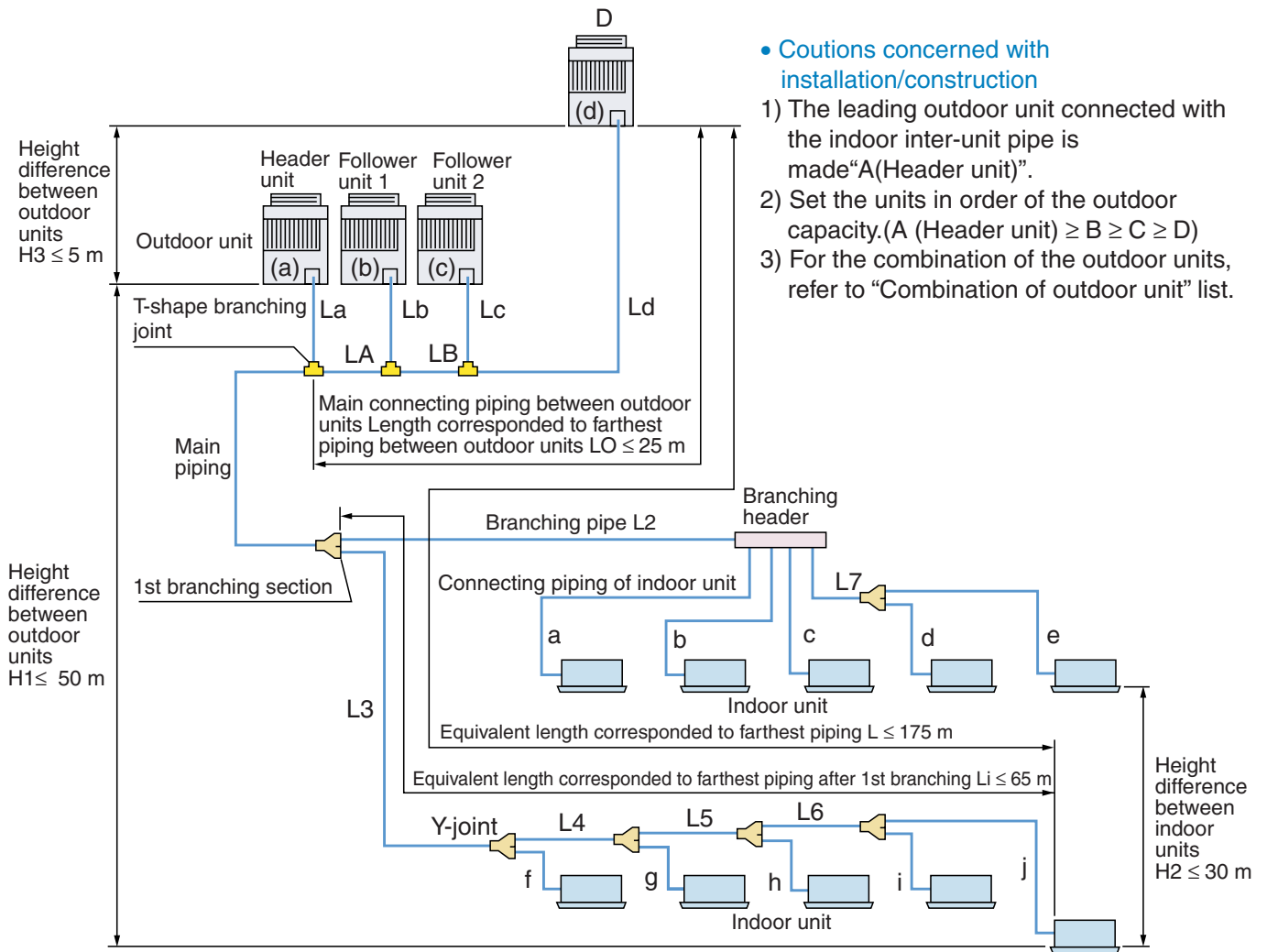
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01 Refrigerant Piping <SMMS>

Allowable length of refrigerant pipe and height difference



- Cautions concerned with installation/construction
 - 1) The leading outdoor unit connected with the indoor inter-unit pipe is made "A(Header unit)".
 - 2) Set the units in order of the outdoor capacity. ($A \geq B \geq C \geq D$)
 - 3) For the combination of the outdoor unit, refer to "Combination of outdoor unit" list.

• Restriction to the system

| | | |
|--|----------------------------------|-------------------------------|
| Max. No. of outdoor units | 4 units | |
| Max. capacity of outdoor units | 48HP | |
| Max. No. of indoor units | 48 units | |
| Max. capacity of indoor units (Depend on by height dif. between indoor units) | $H2 < 15\text{ m}$ | 135% of capa. of outdoor unit |
| | $15\text{ m} < H2 < 30\text{ m}$ | 105% of capa. of outdoor unit |

• Allowable length/height difference of the refrigerant pipe

| | | Allowable value | |
|-------------------|--|-----------------------|-----------|
| Pipe length | Total extended pipe length(Liquid pipe/real length) | 300m | |
| | Farthest equivalent piping length L (1) | 175m | |
| | Max. equivalent length of main pipe (3) | 85m | |
| | Farthest equivalent piping length from 1st branch Li (1) | 65m | |
| | Farthest equivalent piping length between outdoor units LO (1) | 25m | |
| | Max. equivalent length of outdoor unit connecting pipe | 10m | |
| | Max. real length of outdoor unit connecting pipe | 30m | |
| Height difference | Height difference between indoor unit and outdoor unit $H1$ | Outdoor at upper side | 50m |
| | | Outdoor at lower side | 40m (2) |
| | Height difference between indoor units $H2$ | | 30m |
| | Height difference between outdoor units $H3$ | | 5m |

*1 : Farthest outdoor unit: (d), farthest indoor unit: (j) from 1st branch

*2 : If the height difference ($H2$) between indoor units exceeds 3m, set below 30m.

*3 : If Max. capacity of the combined outdoor units exceeds 46HP, Max. equivalent length is up to 70m.

Addition of refrigerant

Calculation of refrigerant

- Keeping valve of the outdoor unit closed, be sure to charge the liquid refrigerant into service port at liquid side.
- If the specified amount of refrigerant cannot be charged, open fully valves of outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode under condition that valve at gas side is a little returned to close side (MAP0801*, MAP1001*, MAP1201* only), and then charge refrigerant into service port at gas side. In this time, choke the refrigerant slightly by operating valve of the bomb to charge liquid refrigerant. The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.
- When refrigerant leaks and refrigerant shortage occurs in the system, recover the refrigerant in the system and recharge refrigerant newly up to the correct level.

Table 2

| Liquid pipe dia. (mm) | 6.4 | 9.5 | 12.7 | 15.9 | 19.1 | 22.2 |
|---|-------|-------|-------|-------|-------|-------|
| Additional refrigerant amount/1m liquid pipe (kg/m) | 0.025 | 0.055 | 0.105 | 0.160 | 0.250 | 0.350 |

Table 1

| Combined HP (HP) | Combined outdoor units (HP) | | | Combined outdoor units (HP) | |
|------------------|-----------------------------|----|----|-----------------------------|------|
| 5 | 5 | | | 0.0 | |
| 6 | 6 | | | 0.0 | |
| 8 | 8 | | | 1.5 | |
| 10 | 10 | | | 2.5 | |
| 12 | 12 | | | 3.5 | |
| 14 | 8 | 6 | 6 | 0.0 | |
| 16 | 8 | 8 | 8 | 0.0 | |
| 18 | 10 | 8 | | 0.0 | |
| 20 | 10 | 10 | | 3.0 | |
| 22 | 12 | 10 | | 5.0 | |
| | 8 | 8 | 6 | 0.0 | |
| 24 | 12 | 12 | | 7.0 | |
| | 8 | 8 | 8 | -4.0 | |
| 26 | 10 | 8 | 8 | -4.0 | |
| 28 | 10 | 10 | 8 | -2.0 | |
| 30 | 10 | 10 | 10 | 0.0 | |
| 32 | 12 | 10 | 10 | 1.0 | |
| | 8 | 8 | 8 | 8 | -6.0 |
| 34 | 12 | 12 | 10 | 3.0 | |
| | 10 | 8 | 8 | 8 | -6.0 |
| 36 | 12 | 12 | 12 | 4.0 | |
| | 10 | 10 | 8 | 8 | -6.0 |
| 38 | 10 | 10 | 10 | 8 | -6.0 |
| 40 | 10 | 10 | 10 | 10 | -5.0 |
| 42 | 12 | 10 | 10 | 10 | -4.0 |
| 44 | 12 | 12 | 10 | 10 | -2.0 |
| 46 | 12 | 12 | 12 | 10 | 0.0 |
| 48 | 12 | 12 | 12 | 12 | 2.0 |

REQUIREMENT

<Entry of refrigerant charge amount>

- Fill the additional refrigerant record column of the wiring diagram indication plate with the additional refrigerant amount at installation work, total refrigerant amount and the name of the service man who charged refrigerant at installation time.
- The total refrigerant amount means the total value of the refrigerant amount at shipment and the additional refrigerant amount at installation time. the refrigerant amount at the shipment is one described on the "Unit nameplate".

After vacuuming work, exchange the vacuum pump with the refrigerant bomb and then start the additional charging work of refrigerant.

Calculation of additional refrigerant charge amount

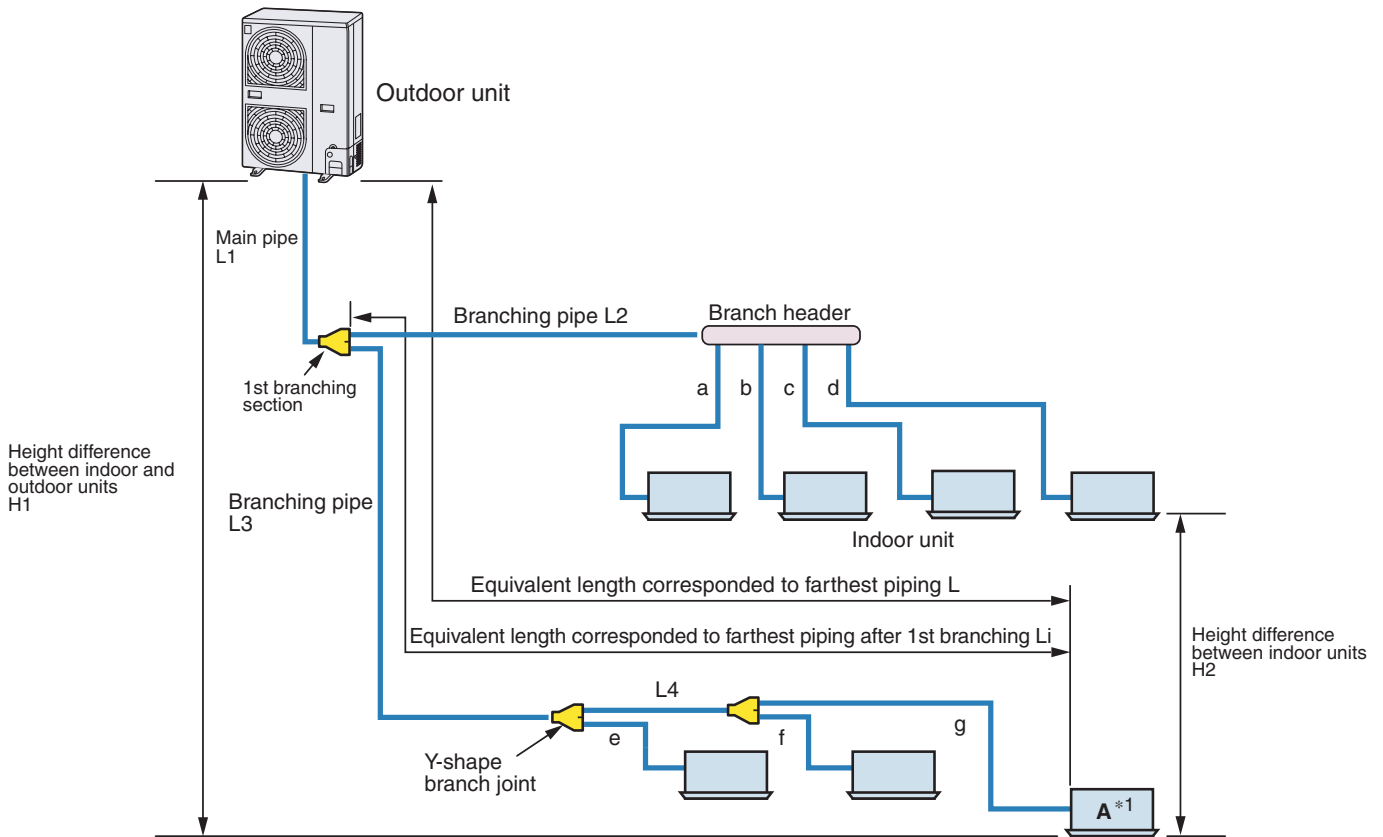
Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipe at the local site. For refrigerant to be charged in pipe at the local site, calculate the amount and charge it additionally.

NOTE) If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without addition of refrigerant.

| | | | | | | |
|--------------------|---------------------------|------------|------------|------------|------------|------------|
| Heat pump model | Outdoor unit Model (MMY-) | MAP0501HT* | MAP0601HT* | MAP0801HT* | MAP1001HT* | MAP1201HT* |
| | Charging amount (kg) | 8.5 | | | 12.5 | |
| Cooling only model | Outdoor unit Model (MMY-) | MAP0501T8 | MAP0601T8 | MAP0801T8 | MAP1001T8 | MAP1201T8 |
| | Charging amount (kg) | 8.0 | | | 11.0 | |

03 Refrigerant Piping <MiNi-SMMS>

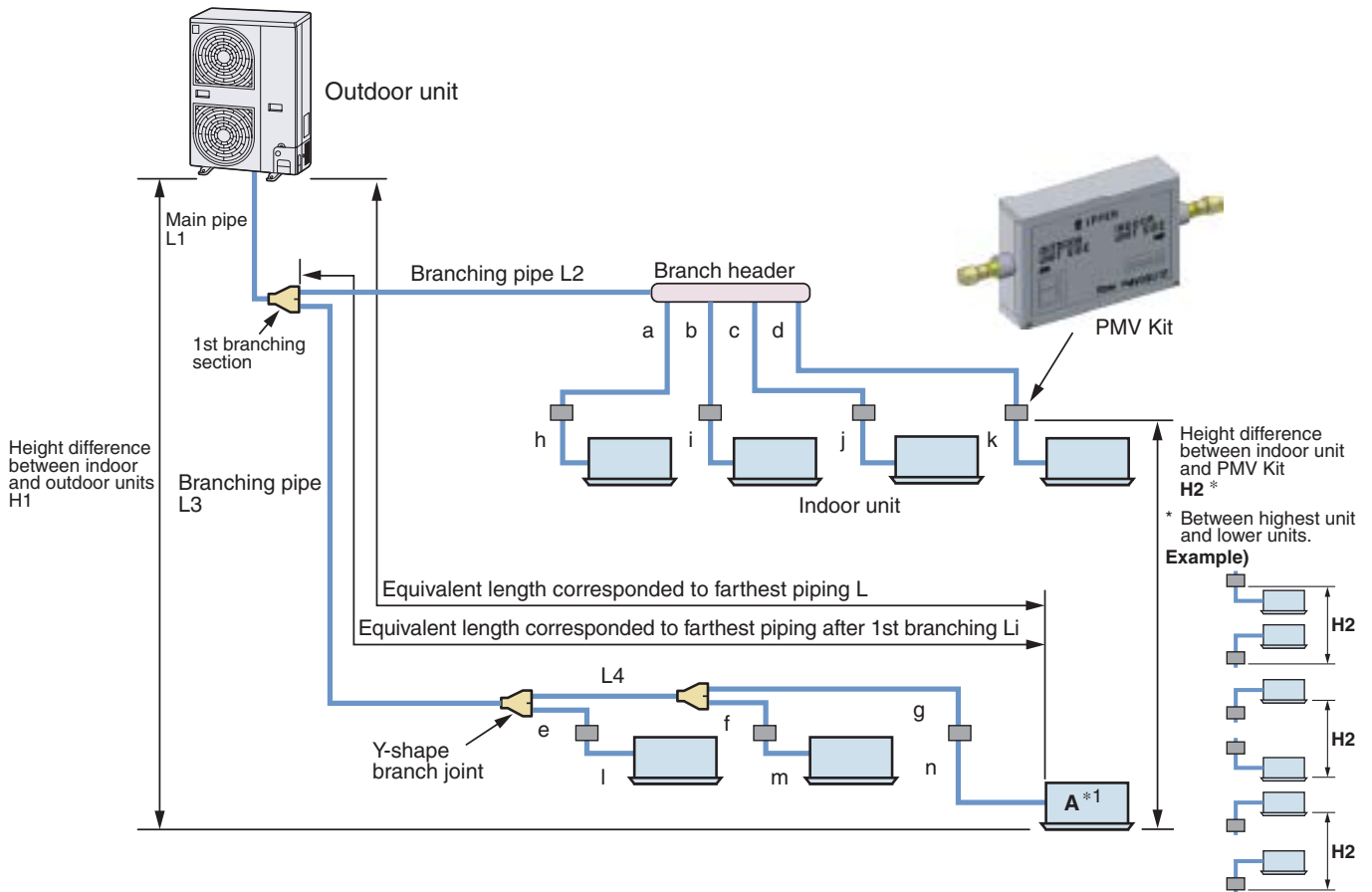
Allowable length/height difference of refrigerant piping



| | | Allowable value | Piping section | |
|-------------------|---|--------------------|---|--------------------|
| Piping Length | Total extension of pipe (Liquid pipe, real length) | 180 m | $L1 + L2 + L3 + L4 + a + b + c + d + e + f + g$ | |
| | Furthest piping length L (*1) | Real length | 100 m | $L1 + L3 + L4 + g$ |
| | | Equivalent length | 125 m | |
| | Max. equivalent length of main pipe | 65 m | L1 | |
| | Equivalent length of furthest piping from 1 st branching Li (*1) | 35 m | $L3 + L4 + g$ | |
| | Max. real length of indoor unit connecting pipe | 15 m | a, b, c, d, e, f, g | |
| Height Difference | Height between indoor and outdoor units H1 | Upper outdoor unit | 30 m | — |
| | | Lower outdoor unit | 20 m | — |
| | Height between indoor units H2 | 15 m | — | |

*1 : Furthest indoor unit from 1st branch to be named "A".

Allowable length/height difference of refrigerant piping for quiet places (with PMV Kit)

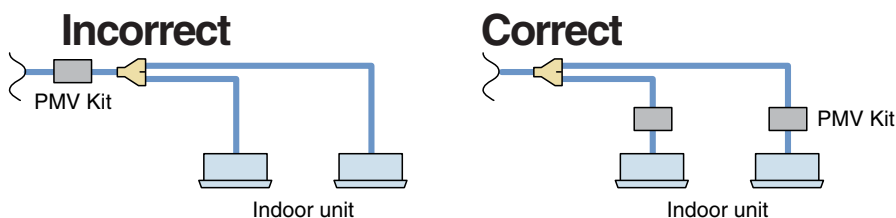


| | | Allowable value | Piping section | |
|-------------------|---|------------------------|---|------------------------|
| Piping Length | Total extension of pipe (Liquid pipe, real length) | 150 m | $L1 + L2 + L3 + L4 + a + b + c + d + e + f + g + h + i + j + k + l + m + n$ | |
| | Furthest piping length L (*1) | Real length | 65 m | |
| | | Equivalent length | 80 m | $L1 + L3 + L4 + g + n$ |
| | Max. equivalent length of main pipe | 50 m | $L1$ | |
| | Equivalent length of furthest piping from 1 st branching Li (*1) | 15 m | $L3 + L4 + g + n$ | |
| | Max. real length of indoor unit connecting pipe | 15 m | $a + h, b + i, c + j, d + k, e + l, f + m, g + n$ | |
| | Real length between PMV KIT and indoor unit | 2 m or more below 10 m | h, i, j, k, l, m, n | |
| Height Difference | Height between indoor and outdoor units H1 | Upper outdoor unit | 30 m | — |
| | | Lower outdoor unit | 20 m | — |
| | Height between indoor unit and PMV kit H2 | 15 m | — | |

*1 : Furthest indoor unit from 1st branch to be named "A".

Note)

Do not connect two or more indoor units to one PMV Kit. Arrange one indoor unit and one PMV Kit set to 1 by 1.



Addition of refrigerant

After vacuuming work, exchange the vacuum pump with the refrigerant bomb and then start the additional charging work of refrigerant.

Calculating the amount of additional refrigerant required

When the system is charged with refrigerant at the factory, the amount of refrigerant needed for the pipes on site is not included. Calculate the additional amount required, and add that amount to the system.

Additional refrigerant charge amount is calculated from size of liquid pipe at site and its real length.

| | | | | | | |
|--|---|-----------------------------------|---|--|---|---|
| Additional refrigerant charge R (kg) amount at site | = | Real length of liquid pipe | × | Additional refrigerant charge amount per liquid pipe 1m (Table 1) | + | Compensation by outdoor HP (Table 2) |
|--|---|-----------------------------------|---|--|---|---|

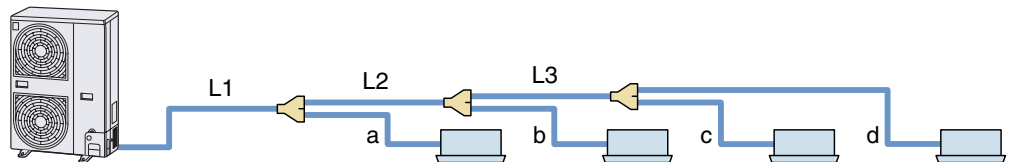
Table 1

| | | |
|---------------------------------------|-------|-------|
| Pipe dia. at liquid side | Ø6.4 | Ø9.5 |
| Additional refrigerant amount/1m (kg) | 0.025 | 0.055 |

Table 2

| | | | |
|---------------------------------|-----------|-----------|-----------|
| Outdoor unit capacity type | 0401 type | 0501 type | 0601 type |
| Compensation by outdoor HP (kg) | - 0.8 | - 0.4 | 0 |

Example : (0501 type)



| | | | | | | | |
|----|------------|----|------------|----|-----------|---|-----------|
| L1 | Ø9.5 : 10m | L2 | Ø9.5 : 10m | L3 | Ø9.5 : 5m | a | Ø9.5 : 3m |
| b | Ø6.4 : 3m | c | Ø6.4 : 4m | d | Ø6.4 : 5m | | |

Additional charge amount R (kg)

$$\begin{aligned}
 &= (L_x \times 0.025\text{kg/m}) + (L_y \times 0.055\text{kg/m}) + (-0.4\text{kg}) \\
 &= (12 \times 0.025\text{kg}) + (28 \times 0.055\text{kg}) + (-0.4\text{kg}) \\
 &= 1.44\text{kg}
 \end{aligned}$$

L_x : Real total length of liquid pipe Ø6.4 (m)
 L_y : Real total length of liquid pipe Ø9.5 (m)

Note)

If the additional refrigerant amount indicates a negative result from the calculation, use air conditioner without the adding of any additional refrigerant.

Charging of refrigerant

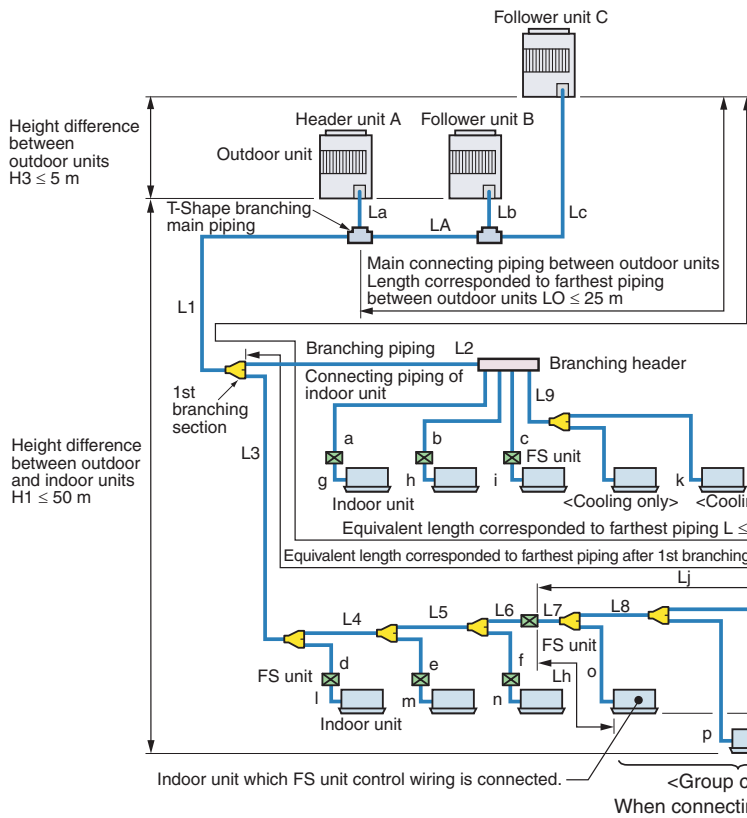
- Keeping valve of the outdoor unit closed, be sure to charge the liquid refrigerant into service port at liquid side.
- If the specified amount of refrigerant cannot be charged, open fully valves of outdoor unit at liquid and discharge / suction gas sides, operate the air conditioner in COOL mode under condition that valve at suction gas side is a little returned to close side, and then charge refrigerant into service port at suction gas side. In this time, choke the refrigerant slightly by operating valve of the bomb to charge liquid refrigerant. The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.
- When refrigerant leaks and refrigerant shortage occurs in the system, recover the refrigerant in the system and recharge refrigerant newly up to the correct level.

REQUIREMENT

Entry of refrigerant charge amount

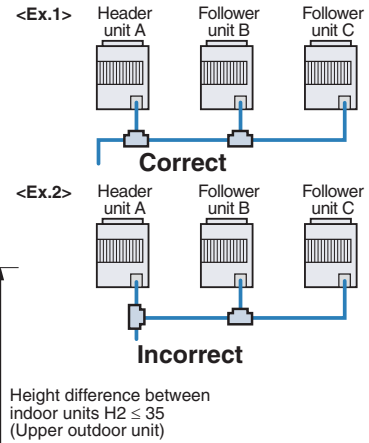
- Complete the refrigerant record column found on the wiring diagram, with detail of the additional refrigerant amount and name of service engineer at the time of installation.
- The total amount of refrigerant refers to the shipment charge plus any additional refrigerant at the time of installation.
The refrigerant amount at shipment is indicated on the unit name plate.

Allowable length of refrigerant pipe and height difference



- Cautions concerned with installation/construction
- 1) The leading outdoor unit connected with the indoor inter-unit pipe is made "A (Header unit)".
- 2) Set the units in order of the outdoor capacity. (A (Header unit) > B > C > D)
- 3) For the combination of the outdoor units, refer to "Combination of outdoor unit" list.

Note:
In case of connecting method <Ex.2>, a large amount of refrigerant and refrigerant oil may return to the head unit. Therefore, set the T-shape joint so that oil does not enter directly.



Height difference between indoor units H2 ≤ 35 (Upper outdoor unit)
Height difference between indoor units in group control by one FS unit H4 ≤ 0.5 m

When connecting the plural indoor units to single FS unit.

• Allowable length/height difference of the refrigerant pipe

| | | Allowable value | Pipe section | |
|--|---|--------------------|--|--|
| Pipe length | Total extension of pipe (Liquid pipe/real length) | 300 m | LA + La + Lb + Lc + L1 + L2 + L3 + L4 + L5 + L6 + L7 + L8 + L9 + a + b + c + d + e + f + g + h + i + j + k + l + m + n + o + p + q | |
| | Farthest piping length L (*1) | Real length | 125 m | LA + Lc + L1 + L3 + L4 + L5 + L6 + L7 + L8 + q |
| | | Equivalent length | 150 m | |
| | Max. equivalent length of main piping | 85 m | L1 | |
| | Equivalent length of farthest piping from 1st branching Li (*1) | 50 m | L3 + L4 + L5 + L6 + L7 + L8 + q | |
| | Max. real length of indoor unit connecting piping | 30 m | a + g, b + h, c + i, d + l, e + m, f + n, f + n, j, k | |
| | Max. real length between FS unit and indoor unit (*2) | 15 m | g, h, i, l, m, n, L7 + o | |
| | Max. equivalent length of outdoor unit connecting pipe LO (*1) | 25 m | LA + Lc (LA + Lb) | |
| | Max. real length of outdoor unit connecting pipe | 10 m | La, Lb, Lc | |
| | Max. equivalent length between FS unit and indoor unit Lj | 30 m | L7 + L8 + p, L7 + L8 + q | |
| Max. real length between FS unit and indoor unit which FS unit control wiring is connected Lh (*2) | 15 m | L7 + o | | |
| Height difference | Height between indoor unit and outdoor unit H1 | Upper outdoor unit | 50 m | — |
| | | Lower outdoor unit | 30 m | — |
| | Height between indoor unit H2 | Upper outdoor unit | 35 m | — |
| | | Lower outdoor unit | 15 m | — |
| | Height between outdoor units H3 | | 5 m | — |
| Height difference between indoor units in group control by one FS unit H4 | | 0.5 m | — | |

*1 : The farthest indoor unit from 1st branch to be named C, and farthest indoor unit from 1st branch to be named (q).

*2 : Attached connection cable can be used up to 5 m in pipe length between indoor unit and FS unit. When the pipe length between indoor and FS unit exceeds 5 m, be sure to use the connection cable kit (RBC-CBK15FE).

• Restriction to the system

| | | |
|---|------------------------|-----------|
| Max. No. of combined outdoor units | 3 units | |
| Max. capacity of combined outdoor units | 84.0 kW | |
| Max. No. of connected indoor units | 48 units | |
| Max. capacity of connected indoor units | H2 ≤ 15 m | 135% (*3) |
| | H2 > 15 m | 105% |
| Min. capacity of connected indoor units | Outdoor capacity : 70% | |

*3 : MMY-MAP1202FT8 up to 120%.

Note 1) Combination of outdoor unit : Header unit (1 unit) + Follower unit (0 to 2 units). Header unit is outdoor unit nearest to the connected indoor units.

Note 2) Install the outdoor units in order of capacity. (Header unit > Follower unit 1 > Follower unit 2)

Note 3) Refer to outdoor unit combination table in page 5.

Note 4) Piping to indoor units shall be perpendicular to piping to the head outdoor unit as <Ex. 1>. Do not connect piping to indoor units in the same direction of head outdoor unit as <Ex. 2>.

07 Refrigerant Piping <SHRM>

Addition of refrigerant

After vacuuming work, exchange the vacuum pump with the refrigerant bomb and then start the additional charging work of refrigerant.

Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipe at the local site. For refrigerant to be charged in pipe at the local site, calculate the amount and charge it additionally.

Note) If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without addition of refrigerant.

| | | | |
|----------------------|----------------|----------------|----------------|
| Outdoor unit Model | MMY-MAP0802FT8 | MMY-MAP1002FT8 | MMY-MAP1202FT8 |
| Charging amount (kg) | 11.5 | | |

$$\text{Additional refrigerant charge amount at local site} = \text{Real length of liquid pipe} \times \text{Additional refrigerant charge amount per 1m liquid pipe (Table 1)} \times 1.3 \text{ Compensation by system HP (Table 2)}$$

Example : Additional charge amount R (kg) = $\{(L1 \times 0.025\text{kg/m}) + (L2 \times 0.055\text{kg/m}) + (L3 \times 0.105\text{kg/m})\} \times 1.3$
 L1 : Real total length of liquid pipe Ø6.4 (m)
 L2 : Real total length of liquid pipe Ø9.5 (m)
 L3 : Real total length of liquid pipe Ø12.7 (m)
 System : 10HP

Table-1

| Liquid pipe dia. (mm) | Additional refrigerant amount/1m liquid pipe (kg/m) |
|-----------------------|---|
| 6.4 | 0.025 |
| 9.5 | 0.055 |
| 12.7 | 0.105 |
| 15.9 | 0.160 |
| 19.1 | 0.250 |
| 22.2 | 0.350 |

Table-2

| Combined (HP) | Combined outdoor unit (HP) | | | C (Corrected refrigerant amount) (kg) |
|---------------|----------------------------|----|----|---------------------------------------|
| 8 | 8 | | | 2.0 |
| 10 | 10 | | | 2.5 |
| 12 | 12 | | | 3.0 |
| 16 | 8 | 8 | | -1.5 |
| 18 | 10 | 8 | | 0.0 |
| 20 | 10 | 10 | | 2.0 |
| 24 | 8 | 8 | 8 | -4.5 |
| 26 | 10 | 8 | 8 | -3.0 |
| 28 | 10 | 10 | 8 | -1.5 |
| 30 | 10 | 10 | 10 | 0.0 |

Charging of refrigerant

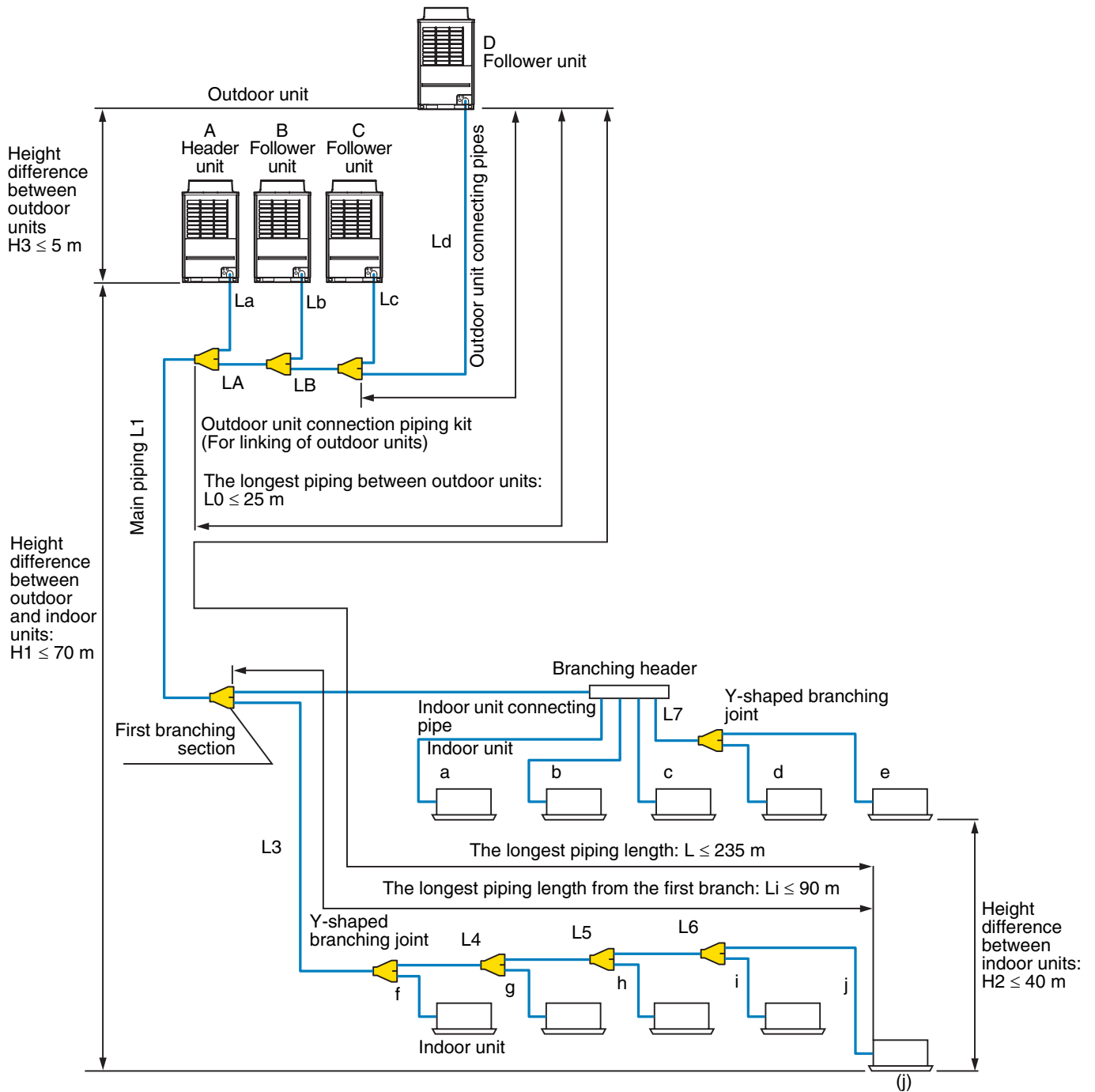
- Keeping valve of the outdoor unit closed, be sure to charge the liquid refrigerant into service port at liquid side.
- If the specified amount of refrigerant cannot be charged, open fully valves of outdoor unit at liquid and discharge / suction gas sides, balance side operate the air conditioner in COOL mode under condition that valve at suction gas side is a little returned to close side, and then charge refrigerant into service port at suction gas side. In this time, choke the refrigerant slightly by operating valve of the bomb to charge liquid refrigerant. The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.
- When refrigerant leaks and refrigerant shortage occurs in the system, recover the refrigerant in the system and recharge refrigerant newly up to the correct level.

REQUIREMENT

<Entry of refrigerant charge amount>

- Fill the additional refrigerant record column of the wiring diagram indication plate with the additional refrigerant amount at installation work, total refrigerant amount and the name of the service man who charged refrigerant at installation time.
- The total refrigerant amount means the total value of the refrigerant amount at shipment and the additional refrigerant amount at installation time. The refrigerant amount at the shipment is one described on the "Unit nameplate".

Allowable Length of Refrigerant Pipes and Allowable Height Difference between Units



System Restriction

| | | |
|---|----------------|--------------------------------|
| | Up to 4 units | |
| Total capacity of outdoor units | Up to 48 HP | |
| Indoor unit connection | Up to 48 units | |
| Total capacity of indoor units (varies depending on the height difference between indoor units.) | H2 ≤ 15m | 135% of outdoor units capacity |
| | 15m < H2 | 105% of outdoor units capacity |

Cautions for Installation

- Set the outdoor unit first connected to the bridging pipe to the indoor units as the header unit.
- Install the outdoor units in order of their capacity codes: A (header unit) ≥ B ≥ C ≥ D
- When connecting gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.
- When piping to outdoor units using Outdoor unit connection piping kits, intersect the pipes to the outdoor unit and those to indoor units at a right angle as shown in figure 1 on "INSTALLATION MANUAL (6. INSTALLATION OF THE OUTDOOR UNIT)". Do not connect them as in figure 2 on "INSTALLATION MANUAL (6. INSTALLATION OF THE OUTDOOR UNIT)".

Allowable Length and Allowable Height Difference of Refrigerant Piping

| | | | | Allowable value | Pipes | |
|--|--|---------------------|------------------------|-----------------|--|--------------------------------------|
| Pipe length | Total extension of pipe (liquid pipe, real length) | Less than 96kW | Less than 34HP or less | 300m | LA + LB + La + Lb + Lc + Ld + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j | |
| | | 96kW or more | 34HP or more | 500m | | |
| | Farthest piping length L (*1) | Equivalent length | | 235m | LA + LB + Ld + L1 + L3 + L4 + L5 + L6 + j | |
| | | Real length | | 190m | | |
| | Main piping length | Equivalent length | | 120m (*2) | L1 | |
| | | Real length | | 100m (*2) | | |
| | Farthest equivalent piping length from the first branch Li (*1) | | | | 90m (*3) | L3 + L4 + L5 + L6 + j |
| | Farthest equivalent piping length between outdoor units L0 (*1) | | | | 25m | LA + LB + Ld (LA + Lb, LA + LB + Lc) |
| | Maximum equivalent piping length of pipes connected to outdoor units | | | | 10m | La, Lb, Lc, Ld |
| | Maximum real length of pipes connected to indoor units | | | | 30m | a, b, c, d, e, f, g, h, i, j |
| Maximum equivalent length between branching sections | | | | 50m | L2, L3, L4, L5, L6, L7 | |
| Height difference | Height between outdoor and indoor units H1 | Upper outdoor units | | 70m (*4) | — | |
| | | Lower outdoor unit | | 40m (*5) | — | |
| | Height between indoor units H2 | | | 40m | — | |
| | Height between indoor units H3 | | | 5m | — | |

* 1: Farthest outdoor unit from the first branch: (D), farthest indoor unit: (j)

* 2: If the total capacity of outdoor units is 46HP or more, make the equivalent length 70m (real length 50m) or less.

* 3: Make the difference 65m or less if the height difference between outdoor and indoor units (H1) is more than 3m.

* 4: Make the difference 50m or less if the height difference between indoor units (H2) is more than 3m.

* 5: Make the difference 30m or less if the height difference between indoor units (H2) is more than 3m.

After finishing vacuuming, exchange the vacuum pump with a refrigerant cylinder and start additional charging of refrigerant.

Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipes at the local site. For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

NOTE

If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without additional refrigerant.

| Heat pump type | Outdoor unit type | MAP080 | MAP100 | MAP120 | MAP140 | MAP160 |
|----------------|----------------------|--------|--------|--------|--------|--------|
| | Charging amount (kg) | 11.5 | | | | |

| | | | | | | |
|--|---|----------------------------|---|--|---|---|
| Additional refrigerant charge amount at local site | = | Real length of liquid pipe | × | Additional refrigerant charge amount per 1 m liquid pipe (Table 1) | + | Corrective amount of refrigerant depending on HP of cooperating outdoor units (Table 2) |
|--|---|----------------------------|---|--|---|---|

Table 1

| | | | | | | |
|---|-------|-------|-------|-------|-------|-------|
| | 6.4 | 9.5 | 12.7 | 15.9 | 19.1 | 22.2 |
| Additional refrigerant amount/1m liquid pipe (kg/m) | 0.025 | 0.055 | 0.105 | 0.160 | 0.250 | 0.350 |

Table 2

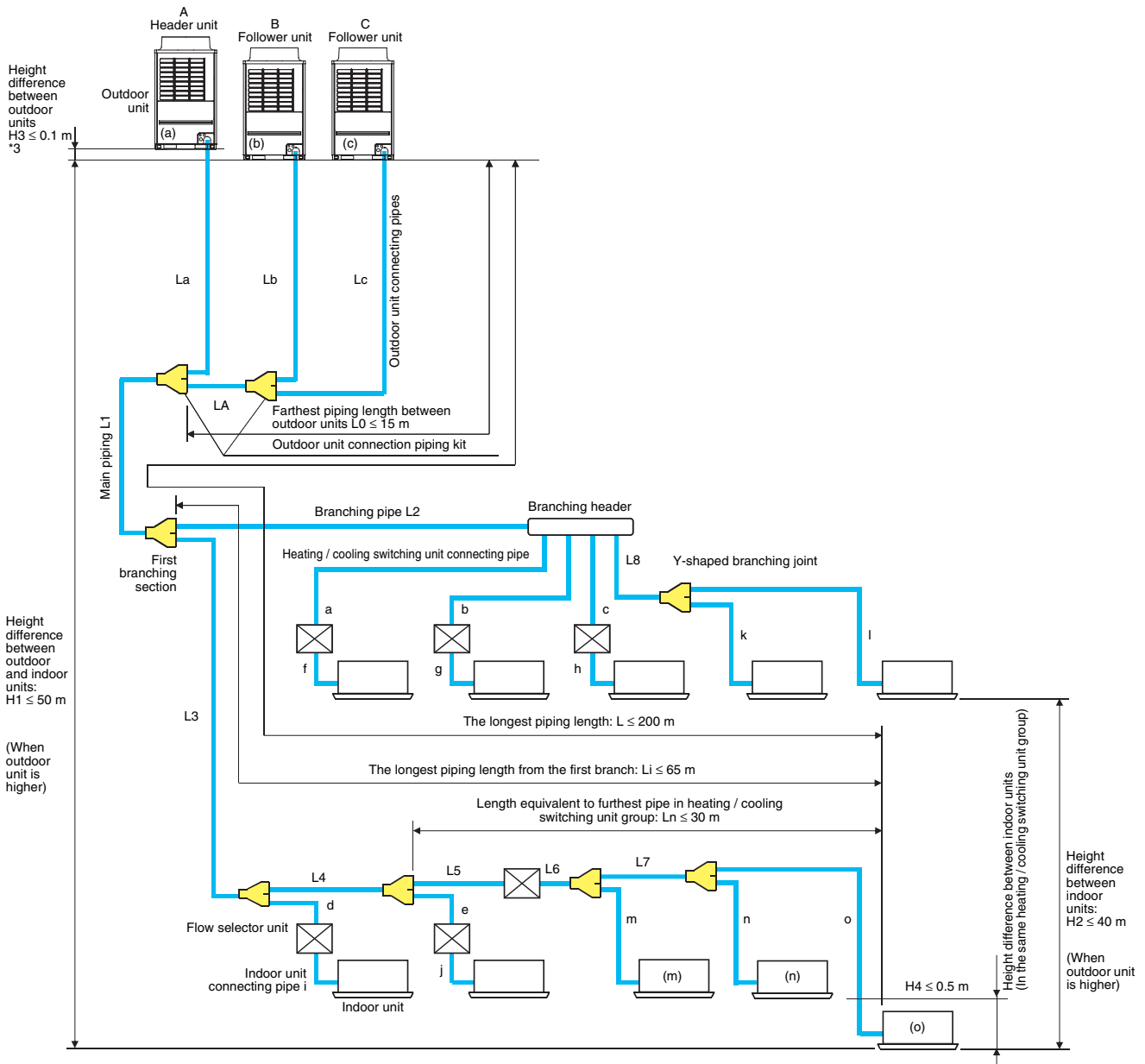
| | Combined HP (HP) | Combined outdoor units (HP) | | | | C (Corrective amount of refrigerant) (kg) |
|----------------------|------------------|-----------------------------|------|------|------|---|
| | Standard type | 8 | 8HP | — | — | — |
| 10 | | 10HP | — | — | — | 2.5 |
| 12 | | 12HP | — | — | — | 3.5 |
| 14 | | 14HP | — | — | — | 8.5 |
| 16 | | 16HP | — | — | — | 10.5 |
| 18 | | 10HP | 8HP | — | — | 0.0 |
| 20 | | 10HP | 10HP | — | — | 3.0 |
| 22 | | 12HP | 10HP | — | — | 5.0 |
| 24 | | 12HP | 12HP | — | — | 7.5 |
| 26 | | 16HP | 10HP | — | — | 8.5 |
| 28 | | 16HP | 12HP | — | — | 9.5 |
| 30 | | 16HP | 14HP | — | — | 11.5 |
| 32 | | 16HP | 16HP | — | — | 12.5 |
| 34 | | 12HP | 12HP | 10HP | — | 3.0 |
| 36 | | 12HP | 12HP | 12HP | — | 4.0 |
| 38 | | 16HP | 12HP | 10HP | — | 6.0 |
| 40 | | 16HP | 12HP | 12HP | — | 7.0 |
| 42 | 16HP | 14HP | 12HP | — | 8.0 | |
| 44 | 16HP | 16HP | 12HP | — | 10.0 | |
| 46 | 16HP | 16HP | 14HP | — | 12.0 | |
| 48 | 16HP | 16HP | 16HP | — | 14.0 | |
| High Efficiency type | 16 | 8HP | 8HP | — | — | 0.0 |
| | 24 | 8HP | 8HP | 8HP | — | -4.0 |
| | 26 | 10HP | 8HP | 8HP | — | -4.0 |
| | 28 | 10HP | 10HP | 8HP | — | -2.0 |
| | 30 | 10HP | 10HP | 10HP | — | 0.0 |
| | 32 | 8HP | 8HP | 8HP | 8HP | -6.0 |
| | 34 | 10HP | 8HP | 8HP | 8HP | -6.0 |
| | 36 | 10HP | 10HP | 8HP | 8HP | -6.0 |
| | 38 | 10HP | 10HP | 10HP | 8HP | -6.0 |
| | 40 | 10HP | 10HP | 10HP | 10HP | -5.0 |
| | 42 | 12HP | 10HP | 10HP | 10HP | -4.0 |
| 44 | 12HP | 12HP | 10HP | 10HP | -2.0 | |
| 46 | 12HP | 12HP | 12HP | 10HP | 0.0 | |
| 48 | 12HP | 12HP | 12HP | 12HP | 2.0 | |

Charging of refrigerant

- Keeping the valve of the outdoor unit closed, be sure to charge the liquid refrigerant into the service port at the liquid side.
- If the specified amount of refrigerant cannot be charged, fully open the valves of the outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode, and then charge refrigerant into service port at the gas side. In this time, choke the refrigerant slightly by operating the valve of the canister to charge liquid refrigerant.
- The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.

11 Refrigerant Piping <SHRM-i>

Allowable length of refrigerant pipes and allowable height difference between units



System restriction

| | | |
|---|------------------------|----------------------------------|
| Outdoor unit combination | Up to 3 units | |
| Total capacity of outdoor units | Up to 42 HP | |
| Indoor unit connection | Up to 48 units | |
| Total capacity of indoor units (varies depending on the height difference between indoor units.) | $H2 \leq 15 \text{ m}$ | 135 % of outdoor units' capacity |
| | $15 \text{ m} < H2$ | 105 % of outdoor units' capacity |

Limit on connecting multiple indoor units to flow selector unit

| Model name | RBM-Y1123FE* | RBM-Y1803FE* | RBM-Y2803FE* |
|--|--------------|--------------------|----------------------|
| Total capacity codes of connected indoor units | Below 11.2 | 11.2 to below 18.0 | 18.0 to 28.0 or less |
| Max. No. of connected indoor unit | Below 5 | Below 8 | Below 8 |

Cautions for installation

- Set the outdoor unit first connected to the bridging pipe to the indoor units as the header unit.
- Install the outdoor units in order of their capacity codes: A (header unit) \geq B \geq C
- When connecting gas pipes to indoor units, use Y-shaped branching joints to keep pipes level.
- When piping to outdoor units using Outdoor unit connection piping kits, intersect the pipes to the outdoor unit and those to indoor units at a right angle.

Allowable length and allowable height difference of refrigerant piping

| Item | | Allowable value | Pipes | | |
|--|--|-------------------------|--|---|-------|
| Pipe length | Total extension of pipe (liquid pipe, real length) | Less than 34 HP or less | 300 m | | |
| | | 34 HP or more | 500 m | | |
| | Farthest piping length L (*1, *3) | Equivalent length | 200 m | LA + Lc + L1 + L3 + L4 + L5 + L6 + L7 + o | |
| | | Real length | 180 m | | |
| | Max. equivalent length of Main piping | H2 > 3 m | Equivalent length | L1 | |
| | | | Real length | | 85 m |
| | | H2 \leq 3 m | Equivalent length | | 120 m |
| | | | Real length | | 100 m |
| | Farthest equivalent piping length from the first branch Li (*1) | H2 > 3 m | 50 m | L3 + L4 + L5 + L6 + L7 + o | |
| | | H2 \leq 3 m | 65 m | | |
| | Farthest equivalent piping length between outdoor units L0 (*1) | | 15 m | LA + Lc (LA + Lb) | |
| | Maximum equivalent piping length of pipes connected to outdoor units | | 10 m | Lc (La, Lb) | |
| | Maximum real length of terminal branching section to indoor units | | 30 m | a + f, b + g, c + h, d + l, e + j, k, l | |
| Maximum real length of between Flow Selector unit and indoor unit | | 15 m | f, g, h, l, j | | |
| Maximum equivalent length between branching sections | | 50 m | L2, L3, L4, L8 | | |
| Height difference | Height between outdoor and indoor units H1 | Upper outdoor units | 50 m | — | |
| | | Lower outdoor units | 30 m | — | |
| | Height between indoor units H2 | Upper outdoor units | 40 m | — | |
| | | Lower outdoor units | 3 m | — | |
| Height between outdoor units H3 | | 0.1 m | — | | |
| <In case of connecting flow selector unit to multiple indoor units> | | | | | |
| Maximum equivalent length indoor units in group control by one Flow Selector unit Ln | | 30 m | L6 + L7 + o | | |
| Maximum real length between Flow Selector unit and indoor unit (*2) | | 15 m | To run wires to indoor unit (m): L6 + m . 15 m, L5 + L6 + L7 + n . 30 m, L5 + L6 + L7 + o . 30 m To run wires to indoor unit (n): L5 + L6 + m . 30 m, L6 + L7 + n . 15 m, L5 + L6 + L7 + o . 30 m | | |
| Height difference between indoor units in group control by one Flow Selector unit H4 | | 0.5 m | — | | |

*1: Farthest outdoor unit from the first branch: (C), farthest indoor unit: (o)

*2: Run wires to one indoor unit and flow selector unit linked with one of those remote controllers if flow selector unit is connected to multiple indoor units.

*3: Allowable values for length equivalent to furthest pipe are shown below and they vary according to performance rank of outdoor unit.

22.4 to 40.0: 185 m, 45.0 to 78.5: 195 m, 85.0 to 118.0: 200 m

13 Refrigerant Piping (Continued) <SHRM-i>

Selection of pipe size

Capacity code of indoor and outdoor units

Selection of pipe material

- For the indoor unit, the capacity code is decided at each capacity rank. (Table 1)
- The capacity codes of the outdoor units are decided at each capacity rank. The maximum number of connectable indoor units and the total value of capacity codes of the indoor units are also decided. (Table 2)

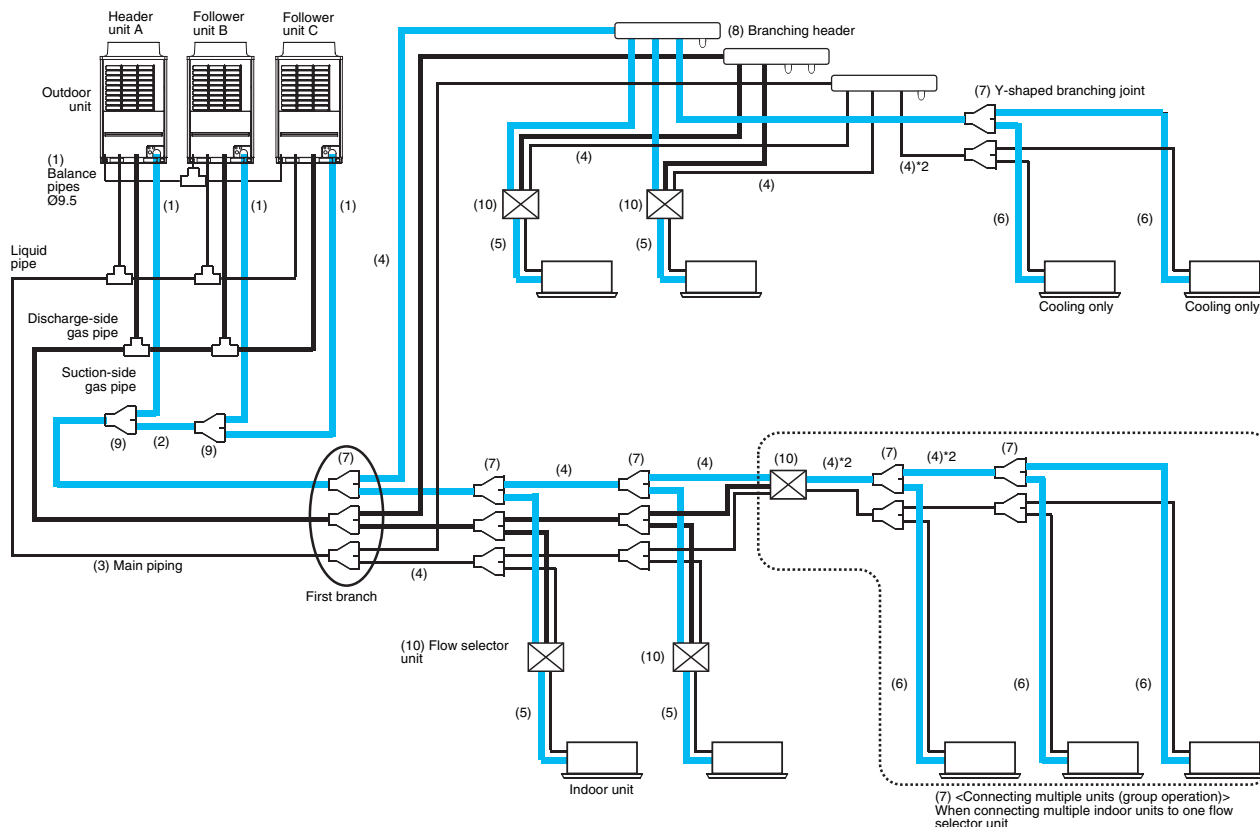


Table 1

| Indoor unit capacity rank | Capacity code | |
|---------------------------|------------------|------------------------|
| | Equivalent to HP | Equivalent to capacity |
| 007 | 0.8 HP | 2.2 |
| 009 | 1 HP | 2.8 |
| 012 | 1.25 HP | 3.6 |
| 015 | 1.7 HP | 4.5 |
| 018 | 2 HP | 5.6 |
| 024 | 2.5 HP | 7.1 |
| 027 | 3 HP | 8 |
| 030 | 3.2 HP | 9 |
| 036 | 4 HP | 11.2 |
| 048 | 5 HP | 14 |
| 056 | 6 HP | 16 |
| 072 | 8 HP | 22.4 |
| 096 | 10 HP | 28 |

NOTE

Compared with the capacity code of the outdoor unit, the total value of capacity codes of the connectable indoor units differs based on the height difference between the indoor units.

- When the height difference between the indoor units is 15 m or less: Up to 70~135 % of the capacity code (Equivalent to HP) of the outdoor unit (Equivalent to HP) of the outdoor unit
- When the height difference between the indoor units is over 15 m: Up to 70~105 % of the capacity code

Table 2

| Outdoor unit model name | Capacity code | | No. of indoor units |
|-------------------------|------------------|------------------------|---------------------|
| | Equivalent to HP | Equivalent to capacity | |
| MAP0804* | 8 HP | 22.4 | 13 |
| MAP1004* | 10 HP | 28 | 16 |
| MAP1204* | 12 HP | 33.5 | 20 |
| MAP1404* | 14 HP | 40 | 23 |
| AP1614* | 16 HP | 45 | 27 |
| AP1814* | 18 HP | 50.4 | 30 |
| AP2014* | 20 HP | 56 | 33 |
| AP2214* | 22 HP | 61.5 | 37 |
| AP2414* | 24 HP | 68 | 40 |
| AP2614* | 26 HP | 73 | 43 |
| AP2814* | 28 HP | 78.5 | 47 |
| AP3014* | 30 HP | 85 | 48 |
| AP3214* | 32 HP | 90 | 48 |
| AP3414* | 34 HP | 96 | 48 |
| AP3614* | 36 HP | 101 | 48 |
| AP3814* | 38 HP | 106.5 | 48 |
| AP4014* | 40 HP | 112 | 48 |
| AP4214* | 42 HP | 118 | 48 |

* For combination of the outdoor units, refer to "Combination of outdoor units".

Selection of pipe size

| No. | Title | Use part | Selection of pipe size | | | | Remarks |
|-----|---|---|---|--------------------------|-------------------------|---------------------------|--------------------|
| (1) | Outdoor unit connecting pipe | Outdoor unit ↓ Outdoor unit connection piping kit | Model | Balance pipe side | Suction gas side | Discharge gas side | Liquid side |
| | | | MAP080 | Ø9.5 | Ø22.2 | Ø19.1 | Ø12.7 |
| | | | MAP100 | Ø9.5 | Ø22.2 | Ø19.1 | Ø12.7 |
| | | | MAP120 | Ø9.5 | Ø28.6 | Ø19.1 | Ø12.7 |
| | | | MAP140 | Ø9.5 | Ø28.6 | Ø22.2 | Ø15.9 |
| (2) | Between Outdoor unit connection piping *6 | Outdoor unit connection piping kit ↓ Outdoor unit connection piping kit | Total capacity codes of outdoor units at the downstream side | | Suction gas side | Discharge gas side | Liquid side |
| | | | Equivalent to capacity | Equivalent to HP | | | |
| | | | 45.0 to below 61.5 | 16 to below 22 | Ø28.6 | Ø22.2 | Ø15.9 |
| | | | 61.5 to below 73.0 | 22 to below 26 | Ø34.9 | Ø28.6 | Ø19.1 |
| | | | 73.0 or more | 26 or more | Ø34.9 | Ø28.6 | Ø19.1 |
| (3) | Main piping | Outdoor unit connection piping kit of header unit ↓ First branching section | Total capacity codes of indoor units at the downstream side | | Suction gas side | Discharge gas side | Liquid side |
| | | | Equivalent to capacity | Equivalent to HP | | | |
| | | | 22.4 to below 33.5 | 8 to below 12 | Ø22.2 | Ø19.1 | Ø12.7 |
| | | | 33.5 to below 38.4 | 12 to below 14 | Ø28.6 | Ø19.1 | Ø12.7 |
| | | | 38.4 to below 45.0 | 14 to below 16 | Ø28.6 | Ø22.2 | Ø15.9 |
| | | | 45.0 to below 61.5 | 16 to below 22 | Ø28.6 | Ø22.2 | Ø19.1 |
| | | | 61.5 to below 73.0 | 22 to below 26 | Ø34.9 | Ø28.6 | Ø19.1 |
| | | | 73.0 to below 101.0 | 26 to below 36 | Ø34.9 | Ø28.6 | Ø22.2 |
| | | | 101.0 or more | 36 or more | Ø41.3 | Ø34.9 | Ø22.2 |
| (4) | Branching pipe *1, *2, *6 | Branching section ↓ Branching section ↓ Branching section ↓ Flow Selector unit ↓ Flow Selector unit ↓ Branching section | Total capacity codes of indoor units at the downstream side | | Suction gas side | Discharge gas side | Liquid side |
| | | | Equivalent to capacity | Equivalent to HP | | | |
| | | | Below 18 | Below 6.4 | Ø15.9 | Ø12.7 | Ø9.5 |
| | | | 18 to below 34 | 6.4 to below 12.2 | Ø22.2 | Ø19.1 | Ø12.7 |
| | | | 34 to below 45.5 | 12.2 to below 16.2 | Ø28.6 | Ø22.2 | Ø15.9 |
| | | | 45.5 to below 56.5 | 16.2 to below 20.2 | Ø28.6 | Ø22.2 | Ø19.1 |
| | | | 56.5 to below 70.5 | 20.2 to below 25.2 | Ø34.9 | Ø28.6 | Ø19.1 |
| | | | 70.5 to below 98.5 | 25.2 to below 35.2 | Ø34.9 | Ø28.6 | Ø22.2 |
| | | | 98.5 or more | 35.2 ore more | Ø41.3 | Ø34.9 | Ø22.2 |
| (5) | Indoor unit connecting pipe | Flow Selector unit ↓ Indoor unit | Capacity rank | Equivalent to HP | Gas side | Liquid side | |
| | | | 007 to 012 | 0.8 to 1.25 | Ø9.5 | Ø6.4 | |
| | | | 015 to 018 | 1.7 to 2.0 | Ø12.7 | Ø6.4 | |
| | | | 024 to 056 | 2.5 to 6.0 | Ø15.9 | Ø9.5 | |
| | | | 072 to 096 | 8.0 to 10.0 | Ø22.2 | Ø12.7 | |

Pipe size differs based on the total capacity codes of all outdoor units (See Table 2.)

Pipe size differs based on the total capacity code value of indoor units at the downstream side. (See Table 1 and 2.)

| No. | Title | Use part | Selection of pipe size | | | | | Remarks |
|------------|--|--|--|------------------------|-----------------------------------|--------------|--------------|---------|
| | | | Capacity rank | Equivalent to HP | Length of piping | Gas side | Liquid side | |
| (6) | Indoor unit connecting pipe | Terminal branching section ↓ Indoor unit | 007 to 012 | 0.8 to 1.25 | 15 m or less real length | Ø9.5 | Ø6.4 | |
| | | | | | Exceeds 15 m real length | Ø12.7 | Ø9.5 | |
| | | | 015 to 018 | 1.7 to 2.0 | 15 m or less real length | Ø12.7 | Ø6.4 | |
| | | | | | Exceeds 15 m real length | Ø15.9 | Ø9.5 | |
| | | | 024 to 056 | 2.5 to 6.0 | — | Ø15.9 | Ø9.5 | |
| 072 to 096 | 8.0 to 10.0 | — | Ø22.2 | Ø12.7 | | | | |
| (7) | Y-shaped branching joint *3, *4 | Branching section | Total capacity code of indoor units | | Model name | | | |
| | | | Equivalent to capacity | Equivalent to HP | For 3 piping | For 2 piping | | |
| | | | Below 18.0 | Below 6.4 | RBM-BY55FE | RBM-BY55E | | |
| | | | 18.0 to below 40.0 | 6.4 to below 14.2 | RBM-BY105FE | RBM-BY105E | | |
| | | | 40.0 to below 70.5 | 14.2 to below 25.2 | RBM-BY205FE | RBM-BY205E | | |
| | 70.5 or more | 25.2 or more | RBM-BY305FE | RBM-BY305E | | | | |
| (8) | Branching header *3, *4, *5 | Branching section | Total capacity code of indoor units | | | | | |
| | | | | Equivalent to capacity | Equivalent to HP | For 3 piping | For 2 piping | |
| | | | For 4 branches | Below 40.0 | Below 14.2 | RBM-HY1043FE | RBM-HY1043E | |
| | | | | 40.0 to below 70.5 | 14.2 to below 25.2 | RBM-HY2043FE | RBM-HY2043E | |
| | | | For 8 branches | Below 40.0 | Below 14.2 | RBM-HY1083FE | RBM-HY1083E | |
| | 40.0 to below 70.5 | 14.2 to below 25.2 | RBM-HY2083FE | RBM-HY2083E | | | | |
| (9) | Outdoor unit connection piping kit *6 | Branching section | Total capacity codes of outdoor units at the downstream side | | | Model name | | |
| | | | Equivalent to capacity | | Equivalent to HP | | | |
| | | | Below 73.0 | | Below 26.0 | RBM-BT14FE | | |
| | | | 73.0 or more | | 26.0 or more | RBM-BT24FE | | |
| (10) | Flow Selector unit *7 | | Total capacity codes of connected indoor units | | | | | |
| | | | Equivalent to capacity | Equivalent to HP | Max. No. of connected indoor unit | Model name | | |
| | | | Below 11.2 | Below 4.0 | Below 5 | RBM-Y1123FE* | | |
| | | | 11.2 to below 18.0 | 4.0 to below 6.4 | Below 8 | RBM-Y1803FE* | | |
| | 18.0 to 28.0 or less | 6.4 to below 10.0 | Below 8 | RBM-Y2803FE* | | | | |

*1: Use the same size as the main pipe if it is larger than the main pipe.

*2: Use a suction gas pipe and a liquid pipe for the two pipes branching downstream from the flow selector unit and the dedicated cooling circuit.

*3: Select the branch pipe of the first branch according to the outdoor capacity code.

*4: Select according to the outdoor unit capacity code if the total of the indoor capacity codes exceeds the outdoor unit capacity code.

*5: It is possible to select up to a maximum capacity code total AP056 (6 HP) for the first circuit after the header branch. When using a branch header for the first branch with an outdoor unit capacity code of 33.5 (12 HP equivalent) or more and 73.0 (26 HP equivalent) or less, use RBM-HY2043FE (4 branches) and RBM-HY2083FE (8 branches) regardless of the total value of the capacity codes of the downstream indoor units. And, a branch header cannot be used as the first branch if the performance rank is over 73.0 (26 HP equivalent).

*6: The downstream starting point is the main pipe.

*7: Only group operation with one remote controller (or two remote controllers) is possible if one flow selector unit is connected to multiple indoor units.

After finishing vacuuming, exchange the vacuum pump with a refrigerant canister and start additional charging of refrigerant.

Calculation of additional refrigerant charge amount

Refrigerant charge amount at shipment from the factory does not include the refrigerant for pipes at the local site. For refrigerant to be charged in pipes at the local site, calculate the amount and charge it additionally.

NOTE

If the additional refrigerant amount indicates minus as the result of calculation, use the air conditioner without additional refrigerant.

| Outdoor unit type | MAP080 | MAP100 | MAP120 | MAP140 |
|----------------------|--------|--------|--------|--------|
| Charging amount (kg) | 11.0 | | | |

| | | | | | | | | |
|--|---|----------------------------|---|---|---|-----|---|--|
| Additional refrigerant charge amount at local site | = | Real length of liquid pipe | × | Additional refrigerant charge amount per 1m liquid pipe (Table 1) | × | 1.3 | + | Corrective amount of refrigerant depending on HP of co-operating outdoor units (Table 2) |
|--|---|----------------------------|---|---|---|-----|---|--|

Table 1

| Liquid pipe dia. (mm) | 6.4 | 9.5 | 12.7 | 15.9 | 19.1 | 22.2 |
|---|-------|-------|-------|-------|-------|-------|
| Additional refrigerant amount/1m liquid pipe (kg/m) | 0.025 | 0.055 | 0.105 | 0.160 | 0.250 | 0.350 |

Table 2

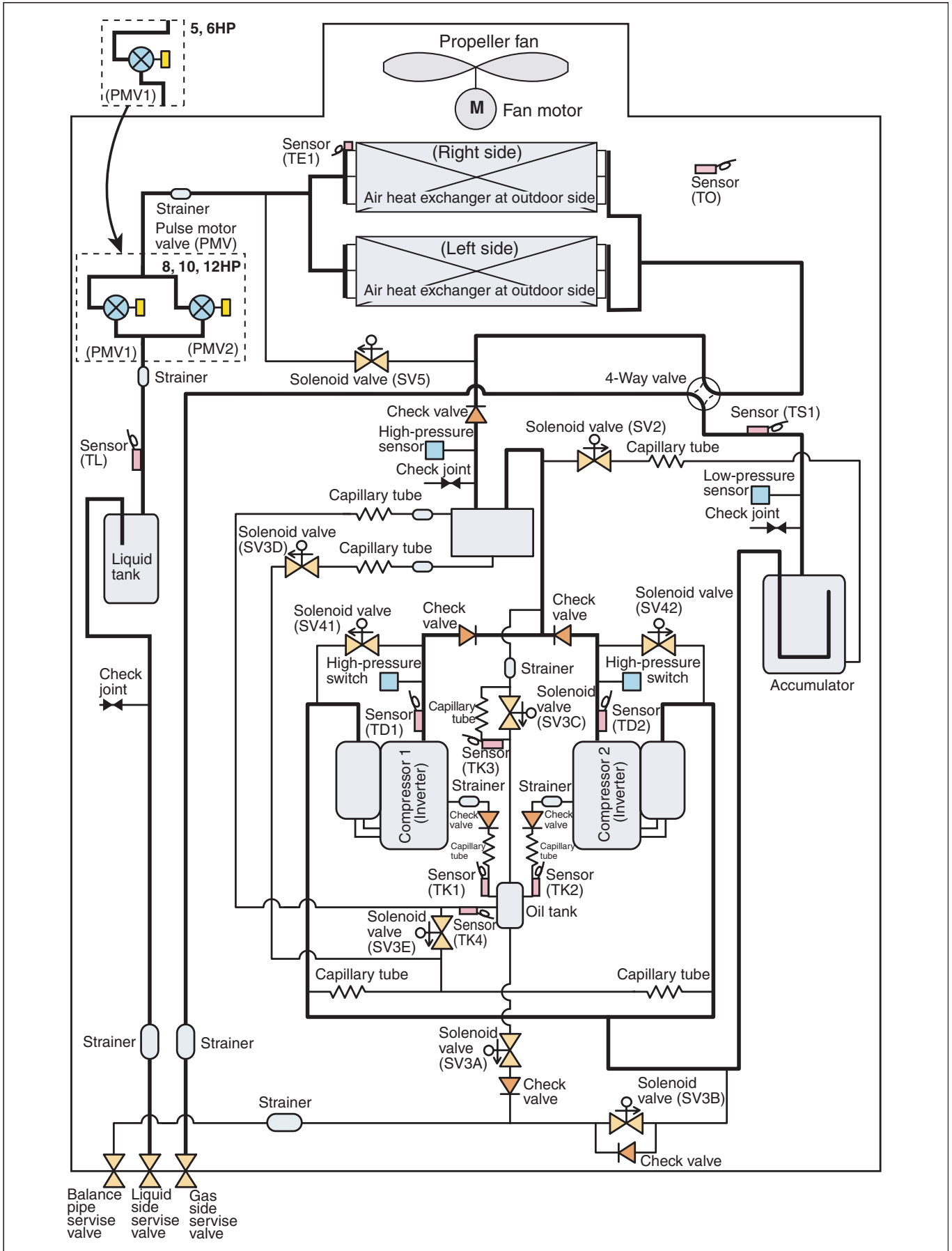
| Equivalent HP | Model name of outdoor unit MMY- | Combination of outdoor unit MMY- | | | Corrective of refrigerant (kg) |
|---------------|---------------------------------|----------------------------------|----------|----------|--------------------------------|
| | | Unit 1 | Unit 2 | Unit 3 | |
| 8 HP | MAP0804* | MAP0804* | — | — | 2 |
| 10 HP | MAP1004* | MAP1004* | — | — | 3 |
| 12 HP | MAP1204* | MAP1204* | — | — | 8 |
| 14 HP | MAP1404* | MAP1404* | — | — | 10 |
| 16 HP | AP1614* | MAP0804* | MAP0804* | — | 0 |
| 18 HP | AP1814* | MAP1004* | MAP0804* | — | 1.5 |
| 20 HP | AP2014* | MAP1004* | MAP1004* | — | 3.5 |
| 22 HP | AP2214* | MAP1204* | MAP1004* | — | 7.5 |
| 24 HP | AP2414* | MAP1404* | MAP1004* | — | 8.5 |
| 26 HP | AP2614* | MAP1404* | MAP1204* | — | 11 |
| 28 HP | AP2814* | MAP1404* | MAP1404* | — | 12 |
| 30 HP | AP3014* | MAP1004* | MAP1004* | MAP1004* | 2.5 |
| 32 HP | AP3214* | MAP1204* | MAP1004* | MAP1004* | 5 |
| 34 HP | AP3414* | MAP1404* | MAP1004* | MAP1004* | 6 |
| 36 HP | AP3614* | MAP1204* | MAP1204* | MAP1204* | 8 |
| 38 HP | AP3814* | MAP1404* | MAP1204* | MAP1204* | 9.5 |
| 40 HP | AP4014* | MAP1404* | MAP1404* | MAP1204* | 11 |
| 42 HP | AP4214* | MAP1404* | MAP1404* | MAP1404* | 12.5 |

Charging of refrigerant

- Keeping the valve of the outdoor unit closed, be sure to charge the liquid refrigerant into the service port at the liquid side.
- If the specified amount of refrigerant cannot be charged, fully open the valves of the outdoor unit at liquid and gas sides, operate the air conditioner in COOL mode, and then charge refrigerant into service port at the gas side. In this time, choke the refrigerant slightly by operating the valve of the canister to charge liquid refrigerant.
- The liquid refrigerant may be charged suddenly, therefore be sure to charge refrigerant gradually.

17 Refrigerant Piping Diagram <SMMS>

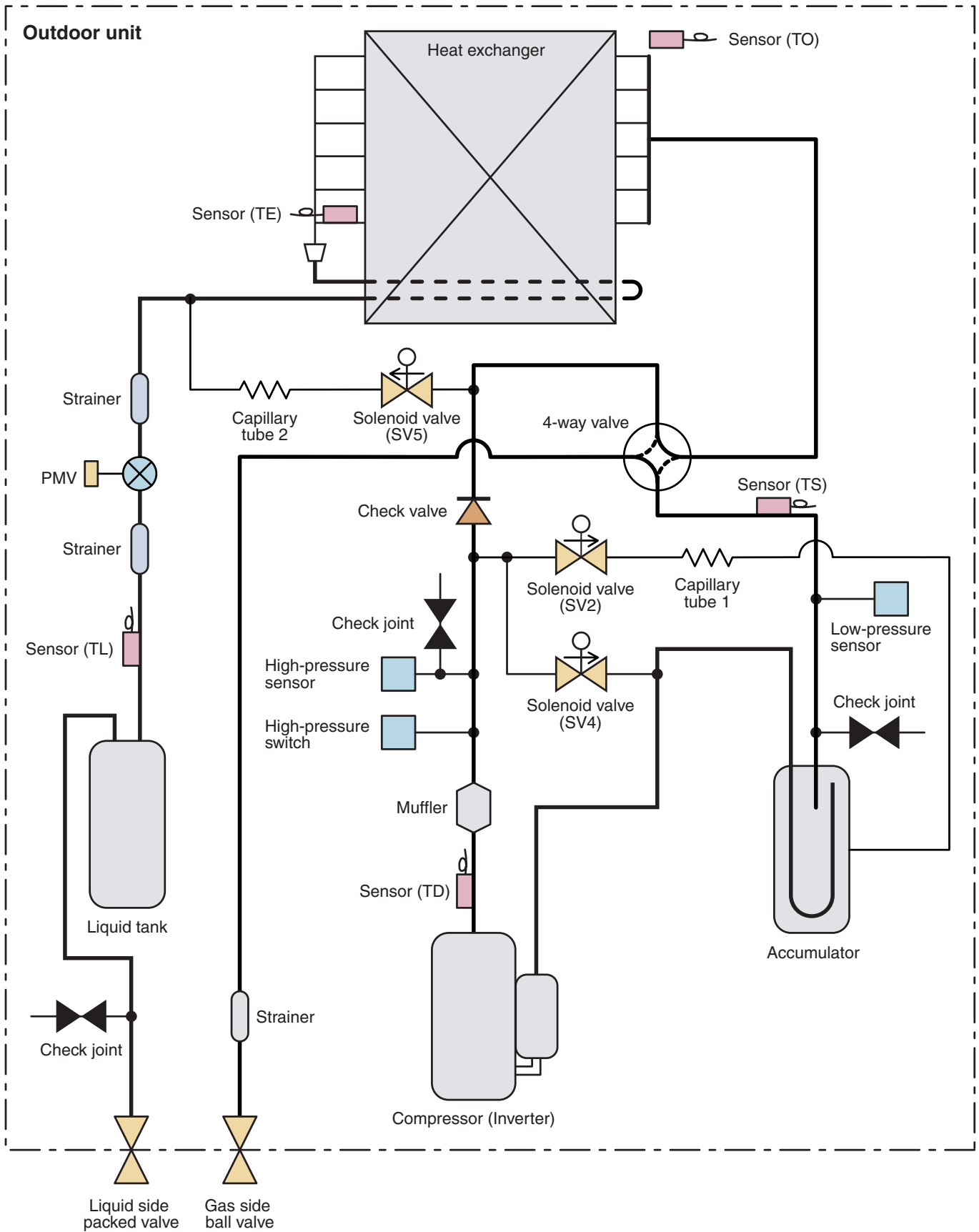
Inverter Unit 5, 6, 8, 10, 12HP



Explanation of Functional Parts

| Functional part name | Functional outline | |
|----------------------|--|---|
| Solenoid valve | 1. SV3A | (Connector CN324: Red) 1) Collects oil in the oil tank during OFF time. 2) Supplies oil reserved in the oil tank during ON time. |
| | 2. SV3B | (Connector CN313: Blue) 1) Returns oil supplied in the balance pipe to the compressor. |
| | 3. SV3C | (Connector CN314: Black) 1) Pressurizes oil reserved in the oil tank during ON time. |
| | 4. SV3D | (Connector CN323: White) 1) Reserves oil in the oil separator during OFF time, and supplies oil during ON time. |
| | 5. SV3E | (Connector CN323: White) 1) Turns on during operation and balances oil between compressors. |
| | 6. SV2 | (Hot gas bypass) (Connector CN312: White) 1) Low pressure release function 2) High pressure release function 3) Gas balance function during stop time |
| | 7. SV4 (n) | (Start compensation valve of compressor) (Connector CN311: Blue) 1) For gas balance start 2) High pressure release function 3) Low pressure release function |
| | 8. SV5 | (Connector CN310: White) (for Heating model only) 1) Preventive function for high-pressure rising in heating operation |
| 4-way valve | (Connector CN317: Blue) 1) Cooling/heating exchange 2) Reverse defrost | |
| Pulse motor valve | PMV 1, 2 | (Connector CN300, 301: White) 1) Super heat control function in heating operation 2) Liquid line shut-down function while follower unit stops 3) Sub-cool adjustment function in cooling operation |
| Oil separator | 1) Prevention for rapid decreasing of oil (Decreases oil flowing to the cycle) 2) Reserve function of surplus oil | |
| Temp. sensor | 1. TD1, TD2 | (TD1: Connector, CN502: White, TD2: Connector, CN503: Pink) 1) Protection of compressor discharge temp. Used for release |
| | 2. TS1 | (Connector CN504: White) 1) Controls super heat in heating operation |
| | 3. TE1 | (Connector CN505: Green) 1) Controls defrost in heating operation 2) Controls outdoor fan in heating operation |
| | 4. TK1, TK2, TK3, TK4 | TK1 Connector CN514: Black, TK2 Connector CN515: Green TK3 Connector CN516: Red, TK4 Connector CN523: Yellow 1) Judges oil level of the compressor |
| | 5. TL | (Connector CN521: White) 1) Detects under cool in cooling operation |
| | 6. TO | (Connector CN507: Yellow) 1) Detects outside temperature |
| Pressure sensor | 1. High pressure sensor | (Connector CN501: Red) 1) Detects high pressure and controls compressor capacity 2) Detects high pressure in cooling operation, and controls the fan in low ambient cooling operation |
| | 2. Low pressure sensor | (Connector CN500: White) 1) Detects low pressure in cooling operation and controls compressor capacity 2) Detects low pressure in heating operation, and controls the super heat |
| Heater | Compressor case heater | (Compressor 1 Connector CN316: White, Compressor 2 Connector CN315: Blue) 1) Prevents liquid accumulation to compressor |
| | Accumulator case heater | (Connector CN321: Red) 1) Prevents liquid accumulation to accumulator |
| Balance pipe | 1) Oil balancing in each outdoor unit | |

Model : MCY-MAP0401/0501/0601HT, MCY-MAP0401/0501/0601HT2D

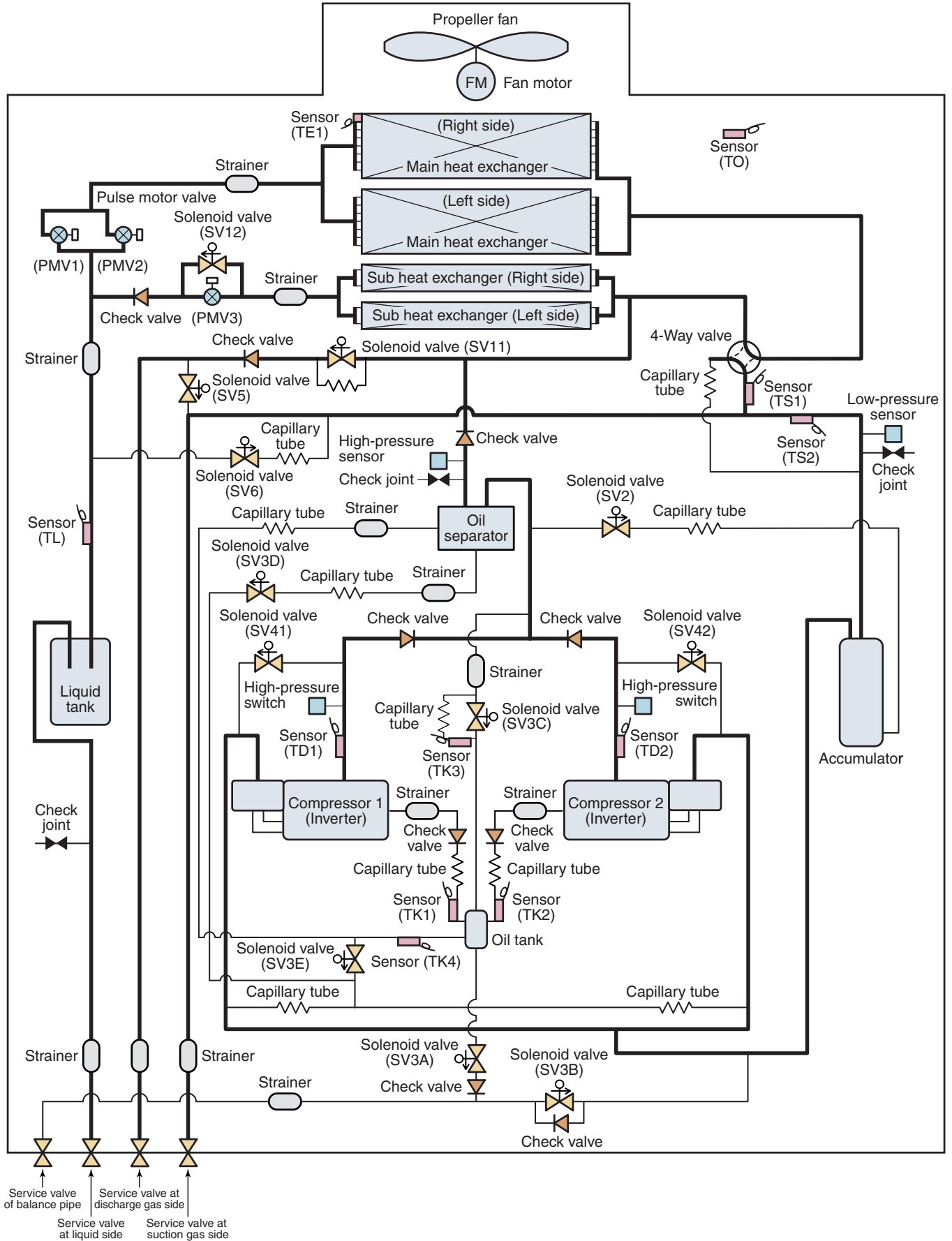


Explanation of Functional Parts

| Functional part name | | Functional outline | Connector |
|-------------------------|-----|--|----------------|
| Solenoid valve | SV2 | 1) Low-pressure release function 2) High-pressure release function 3) Gas balance function during off time 4) Hot gas bypass into accumulator | CN312 (White) |
| | SV4 | 1) High-pressure release function 2) Low-pressure release function | CN311 (Blue) |
| | SV5 | 1) Preventive function for high-pressure rising in heating operation | CN310 (White) |
| Capillary tube | 1 | ID : Ø1.5, Length : 200 mm | |
| | 2 | ID : Ø2.2, Length : 100 mm | |
| 4-way valve | | 1) Cooling/heating exchange 2) Reverse defrost | CN317 (Blue) |
| PMV (Pulse motor valve) | | 1) Super heat control function 2) Sub-cool adjustment function in cooling operation | CN300 (White) |
| Temp. sensor | TD | 1) Protection of compressor discharge temp. Used for release | CN502 (White) |
| | TS | 1) Controls super heat in heating operation | CN504 (White) |
| | TE | 1) Controls defrost in heating operation 2) Controls outdoor fan in heating operation | CN505 (Green) |
| | TL | 1) Detects under cool in cooling operation | CN521 (White) |
| | TO | 1) Detects outside temperature | CN507 (Yellow) |
| High-pressure sensor | | 1) Detects high-pressure and controls compressor capacity 2) Detects high-pressure in cooling operation and controls the fan in low ambient cooling operation | CN501 (Red) |
| Low-pressure sensor | | 1) Detects low-pressure in cooling operation and controls compressor capacity 2) Detects low-pressure in heating operation and controls the super heat | CN500 (White) |
| Compressor case heater | | 1) Prevents liquid accumulation to compressor | CN316 (White) |
| Accumulator case heater | | 1) Prevents liquid accumulation to accumulator | CN321 (Red) |

Inverter unit (8, 10, 12HP)

Model: MMY-MAP0802FT8, MAP1002FT8, MAP1202FT8



Explanation of functional parts

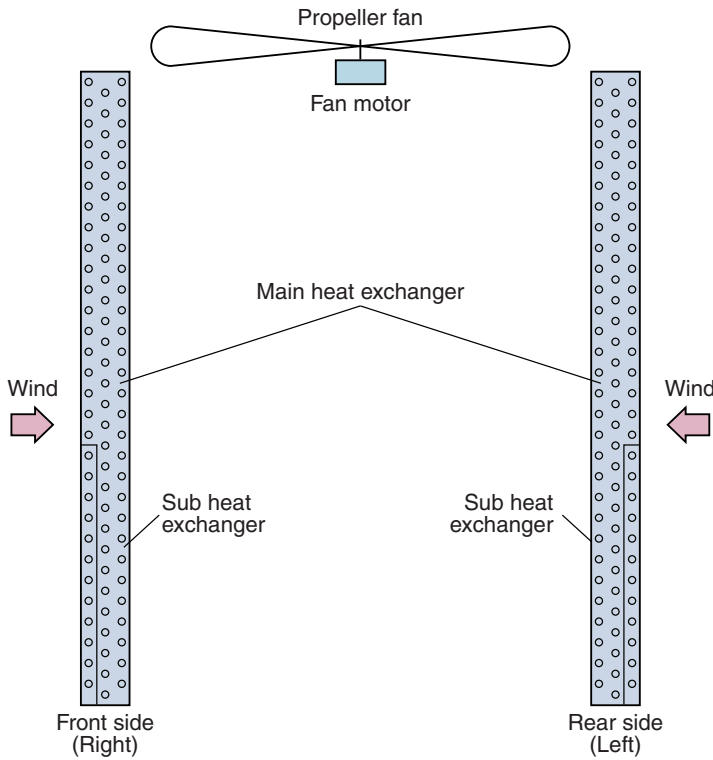
| Functional part name | | Functional outline |
|----------------------|---|---|
| Solenoid valve | SV3A | (Connector CN324: Red) Closed : Allows oil to collect/remain in the oil tank. Open : Allows oil to exit the oil tank. |
| | SV3B | (Connector CN313: Blue) Open : Allows oil to return to the outdoor unit via the balance pipe. |
| | SV3C | (Connector CN314: Black) Open : Pressurizes the oil tank. |
| | SV3D | (Connector CN323: White) Open : Supplies oil to the compressor from the oil separator. |
| | SV3E | (Connector CN323: White) Open : Turns on during operation and balances oil between compressors. |
| | SV2 | (Hot gas bypass) (Connector CN312: White) 1) Low pressure release function 2) High pressure release function 3) Gas balance function during stop time |
| | SV41 SV42 | (Gas balance control for compressor start-up) (Connector CN311: Blue) 1) For gas balance start 2) High pressure release function 3) Low pressure release function |
| | SV5 | (Connector CN310: White) 1) Increase of No. of heating indoor units, Gas balance function in defrost time 2) Low-pressure balance function of discharge gas pipe during all cooling operation |
| | SV6 | (Connector CN309: White) 1) Liquid bypass function for discharge temp. release (Cooling bypass circuit) |
| | SV11 | (Connector CN322: White) 1) For shutdown discharge gas (During all cooling operation and defrost operation) |
| SV12 | (Connector CN319: White) 1) Flow-rate control function of refrigerant to sub heat exchanger during simultaneous operation 2) Flow-rate control function of refrigerant to sub heat exchanger during defrost operation | |
| 4-way valve | (Connector CN317: Blue) 1) Cooling/Heating selection 2) Reverse defrost 3) Main-/Sub-heat exchanger selection | |
| Pulse motor valve | PMV1, 2 | (Connector CN300, 301: White) 1) Super heat control function during all heating operation and mainly heating, partly cooling operation 2) Under-cool adjustment function during all cooling operation 3) Divided flow control function during mainly cooling, partly heating operation |
| | PMV3 | (Connector CN302: Red) 1) For flow-rate control of sub heat exchanger during simultaneous operation (Control function of heating divided flow) 2) A function preventive high pressure up during all cooling or all heating operation |
| Oil separator | 1) Prevention for early drop of oil level (Decrease of flow-out of discharge oil to cycle) 2) Reserve function of surplus oil | |
| Temp. sensor | TD1, TD2 | (TD1: Connector CN502: White, TD2: Connector CN503: Pink) 1) Protection of compressor discharge temp. 2) Releasing of discharge temp. |
| | TS1 | (Connector CN504: White) 1) Controls super heat of PMV1 and 2 during all heating operation and simultaneous operation |
| | TS2 | (Connector CN522: Black) 1) Controls indoor oil recovery during all cooling operation and mainly cooling, partly heating operation 2) Detects overheat of cycle. |
| | TE | (Connector CN505: Green) 1) Controls defrost during all heating operation and simultaneous operation. 2) Controls outdoor fan during all heating operation and simultaneous operation. |
| | TK1, TK2, TK3, TK4 | (TK1: Connector CN514: Black, TK2: Connector CN515: Green,) (TK3: Connector CN516: Red, TK4: Connector CN523: Yellow) 1) Judges oil level of compressor. |
| | TL | (Connector CN521: White) 1) Detects under-cool during all cooling operation and simultaneous operation. |
| | TO | (Connector CN507: Yellow) 1) Detects external ambient temperature. |

| Functional part name | | Functional outline |
|----------------------|-------------------------|---|
| Pressure sensor | High pressure sensor | (Connector CN501: Red) 1) Detects high pressure and uses it to control capacity of compressor. 2) Detects high pressure during all cooling operation and uses it to control fan when cooling with low outside air. 3) Detects under-cool of the indoor unit of which heating thermo.-ON during all heating operation and simultaneous operation. 4) Controls outdoor fan rpm during mainly cooling, part heating operation. |
| | Low pressure sensor | (Connector CN500: White) 1) Detects low pressure and uses it to control capacity of compressor during all cooling operation and simultaneous operation 2) Detects low pressure and uses it to controls super heat during all heating operation and simultaneous operation |
| Heater | Compressor case heater | (Compressor 1 Connector CN316: White, Compressor 2 Connector CN315: Blue) 1) Prevents liquid accumulation in the compressor |
| | Accumulator case heater | (Connector CN321: Red) 1) Prevents liquid accumulation to accumulator |
| Balance pipe | | 1) Oil balancing pipe between outdoor unit (This unit does not use this Balance pipe.) |

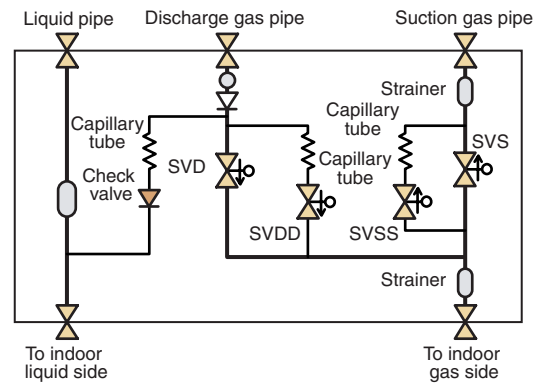
<Operation mode>

| Operation mode | Outline |
|---|---|
| 1. All Indoor Unit(s) Operating for Cooling | Only cooling operation without heating operation Outdoor heat exchanger (Main heat exchanger) is used as condenser. |
| 2. All Indoor Unit(s) Operating for Heating | Only heating operation without cooling operation Outdoor heat exchanger (Main heat exchanger) is used as evaporator. |
| 3. Simultaneous operation | MIU for simultaneous operation |
| 3-1. Mainly cooling, partly heating operation | Cooling/heating simultaneous operation with subjective cooling operation Outdoor heat exchanger (Sub heat exchanger) is used as condenser. |
| 3-2. Mainly heating, partly cooling operation | Cooling/heating simultaneous operation with subjective heating operation Outdoor heat exchanger (Main heat exchanger) is used as evaporator. |
| 4. Defrost | Using reversing operation of 4-way valve, ice of the outdoor heat exchanger is dissolved with single cooling cycle. |

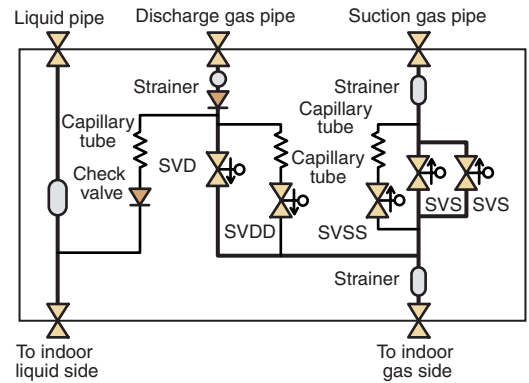
Configuration of outdoor unit heat exchanger



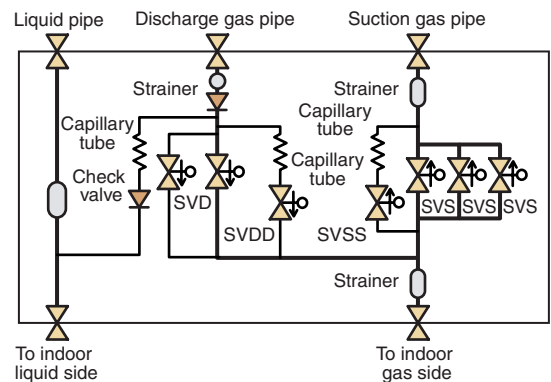
Flow Selector Unit (FS Unit)



* RBM-Y1801FE has two "SVS" valves.



* RBM-Y2802FE has three "SVS" valves and two "SVD".



| Functional part name | Functional outline |
|----------------------|--|
| Solenoid valve | SVD (Discharge gas block valve) 1) High pressure gas circuit during heating operation |
| | SVS (Suction gas block valve) 1) Low pressure gas circuit during cooling operation |
| | SVDD (Pressure valve) 1) For pressurizing when No. of heating indoor units increases. |
| | SVSS (Reducing valve) 1) For recovery of refrigerant of the stopped indoor unit of which cooling thermo-OFF 2) For reducing pressure when No. of heating indoor units decreases. |

Refrigerant piping systematic diagram in system

<Selection of operation mode>

For the selection of each operation mode, see the table below:

“Stop Once” means the system does not operate for 3 minutes after operation before update has stopped.

| | | After update | | | |
|------------------|--|-----------------------------------|---|---|--------------------------------|
| | | All cooling operation (OFF) | Mainly cooling, partly heating cooperation (ON) | Mainly heating, partly cooling operation (ON) | All heating operation (ON) |
| Before update | All cooling operation (OFF) | | Operation continues (OFF → ON) | Operation continues (OFF → ON) | Stop once (OFF → ON) |
| | Mainly cooling, partly heating cooperation (ON) | Operation continues (ON → OFF) | | Operation continues (As ON) | Operation continues (As ON) |
| | Mainly heating, partly cooling operation (ON) | Stop Once (ON → OFF) | Operation continues (As ON) | | Operation continues (As ON) |
| | All heating operation (ON) | Stop Once (ON → OFF) | Operation continues (As ON) | Operation continues (As ON) | |

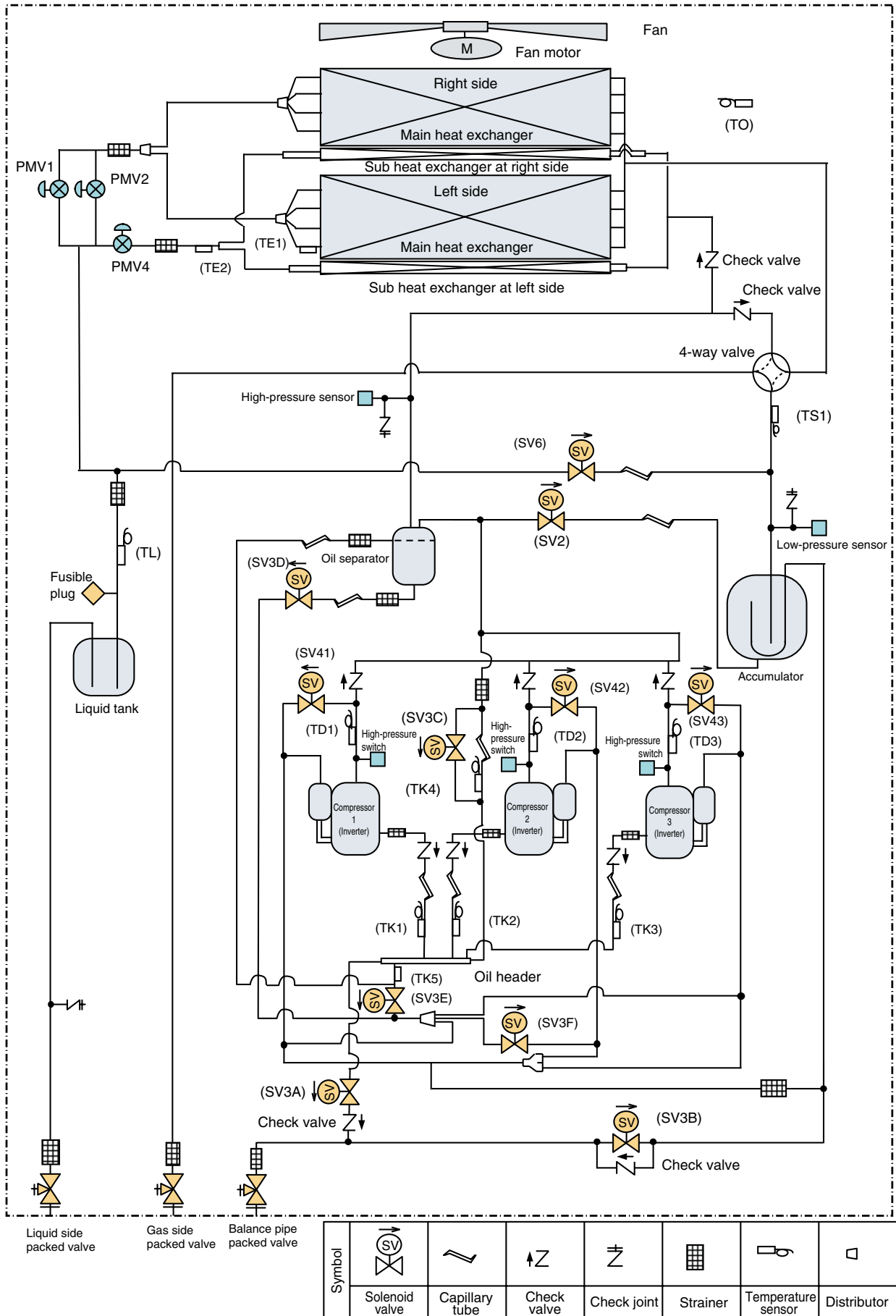
Note) Phrases in parentheses in the table indicate status of 4-way valve.

<ON-OFF list of Flow Selector Unit (FS Unit) valve>

| Indoor operation mode | Outline of control valve output of FS unit (Basic operation) | | | |
|--|--|---|--|---|
| | SVD (High pressure circuit valve) | SVDD (Pressure valve <For delay>) | SVS (Low pressure circuit valve) | SVSS (Reducing valve <For delay>) |
| 1. Stop (Remote controller OFF) <All system stop> | OFF <OFF> | OFF <OFF> | OFF <OFF> | ON <OFF> |
| 2. Cooling thermo-OFF | OFF | OFF | OFF | ON |
| 3. Cooling thermo-ON | OFF | OFF | ON | ON |
| 4. Heating thermo-OFF | ON | OFF | OFF | OFF |
| 5. Heating thermo-ON | | | | |
| 6. E04 error is being detected | OFF | ON | OFF | OFF |

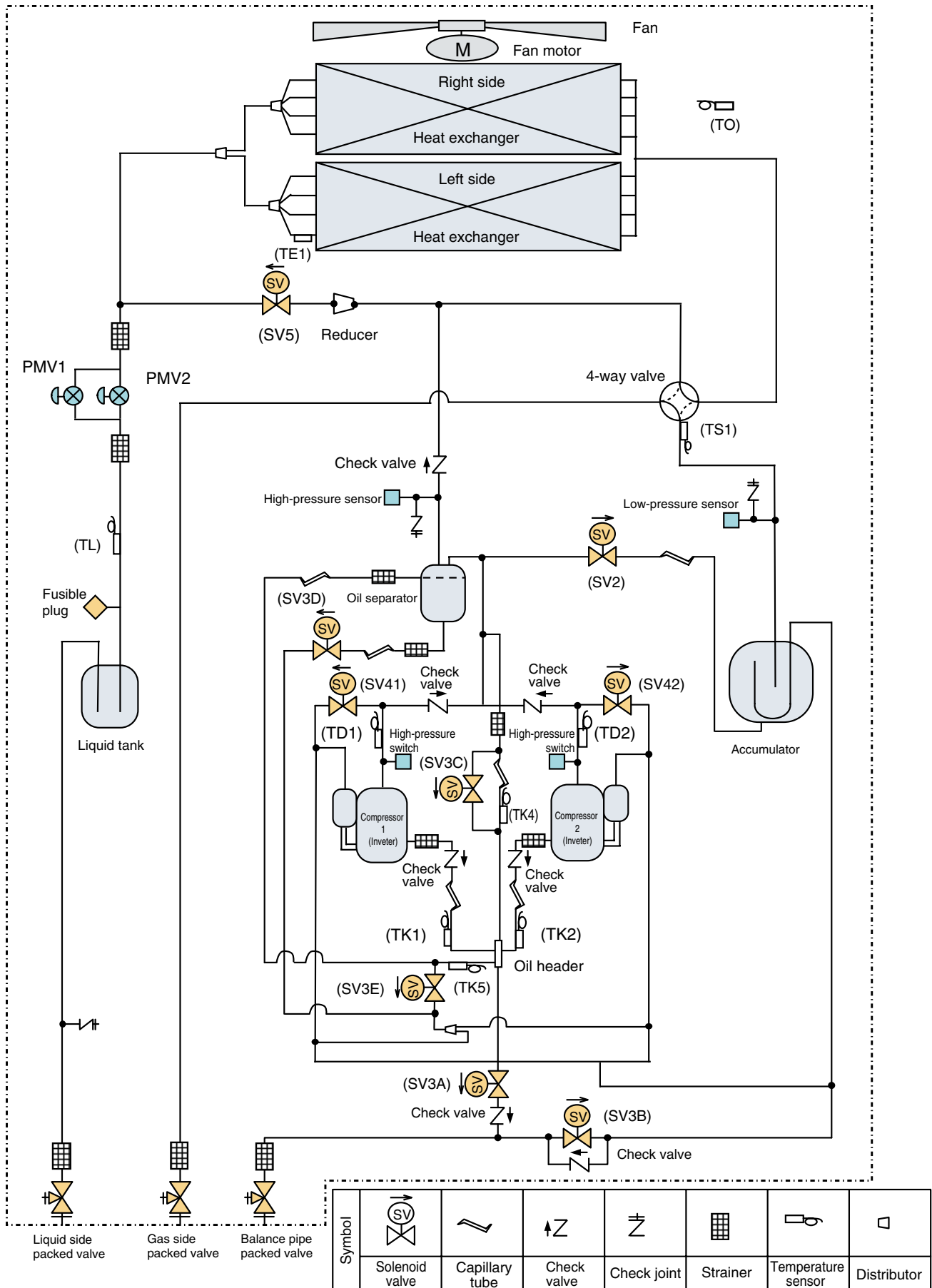
Outdoor Unit (14, 16HP)

Model: MMY-MAP1404*, MMY-MAP1604*



Outdoor Unit (8, 10, 12HP)

Model: MMY-MAP0804*, MMY-MAP1004*, MMY-MAP1204*

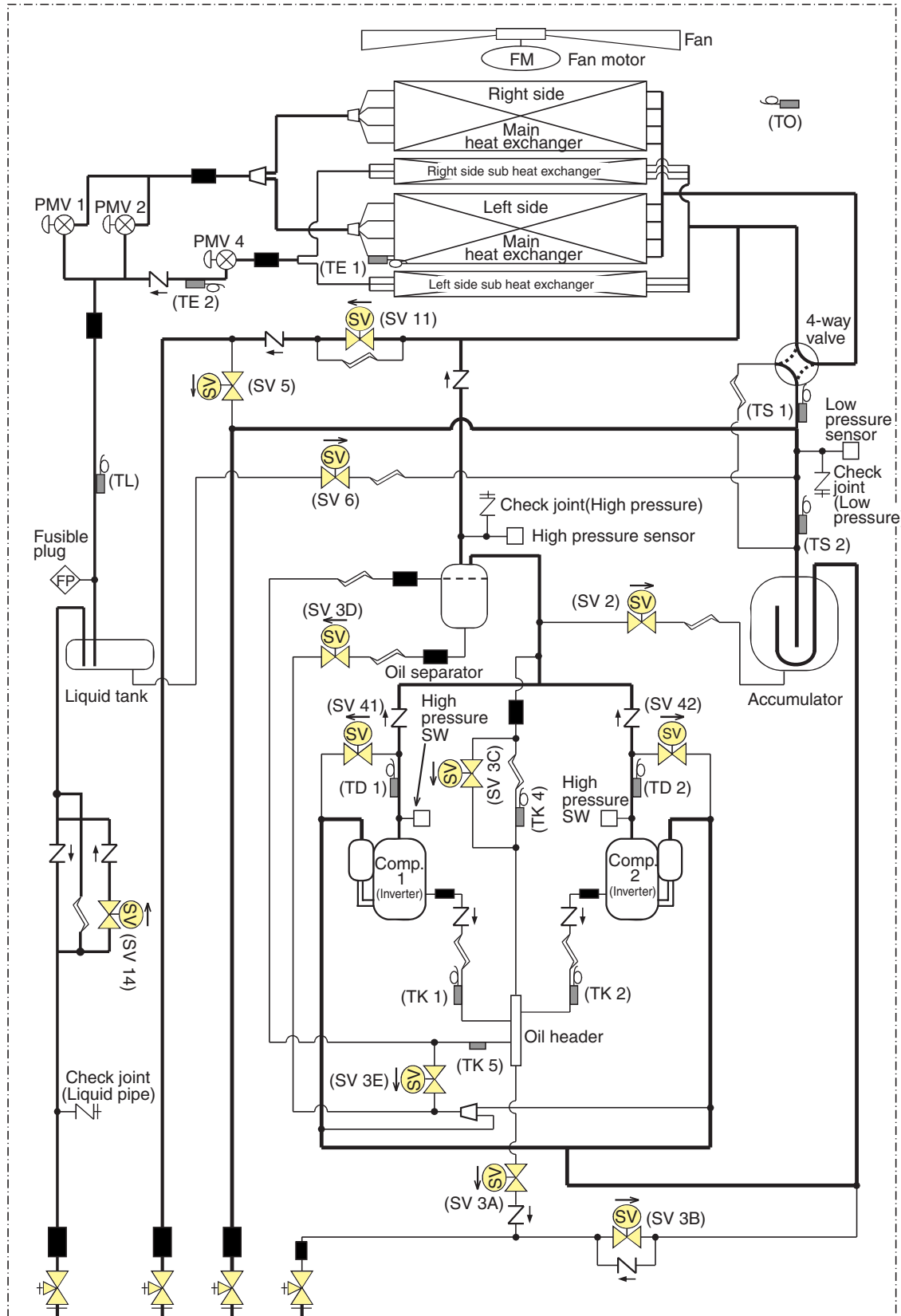


Explanation of Functional Parts

| Functional part name | | Functional outline |
|----------------------|--|--|
| Solenoid valve | SV3A | (Connector CN321: White) 1) Supplies oil reserved in the oil header during ON time. |
| | SV3B | (Connector CN321: White) 1) Returns oil supplied in the balance pipe to the compressor. |
| | SV3C | (Connector CN321: White) 1) Pressurizes oil reserved in the oil header during ON time. |
| | SV3D | (Connector CN322: White) 1) Reserves oil in the oil separator during OFF time. 2) Returns oil reserved in the oil separator to the compressor during ON time. |
| | SV3E | (Connector CN322: White) 1) Turns on during operation and balances oil between compressors. |
| | SV3F | (Connector CN323: White) 1) Controls oil level balances between compressors. |
| | SV2 | (Hot gas bypass) (Connector CN311: White) 1) Low pressure release function 2) High pressure release function 3) Gas balance function during stop time |
| | SV41 SV42 SV43 | (Start compensation valve of compressor) (SV41 Connector CN312: Blue, SV42 Connector CN312: Blue, SV43 Connector CN313: Red) 1) For gas balance start 2) High pressure release function 3) Low pressure release function |
| | SV5 | (Connector CN314: White) 1) Preventive function for high-pressure rising in heating operation |
| | SV6 | (Connector CN315: White) 1) Liquid bypass function for discharge temperature release (cooling bypass function) |
| 4-way valve | (Connector CN317: Blue) 1) Cooling/heating exchange 2) Reverse defrost | |
| Pulse motor valve | PMV1, 2 | (Connector CN300, 301: White) 1) Super heat control function in heating operation 2) Liquid line shut-down function while follower unit stops 3) Under cool adjustment function in cooling operation 4) Exchange function between main and sub exchangers in cooling operation |
| | PMV4 | (Connector CN303: Red) 1) Exchange function between main and sub exchangers in cooling operation 2) Preventive function for high-pressure rising in heating operation |
| Oil separator | 1) Prevention for rapid decreasing of oil (Decreases oil flowing to the cycle) 2) Reserve function of surplus oil | |
| Temp. Sensor | TD1 TD2 TD3 | (TD1 Connector CN502: White, TD2 Connector CN503: Pink, TD3 Connector CN504: Blue) 1) Protection of compressor discharge temp. 2) Used for discharge temperature release |
| | TS1 | (Connector CN505: White) 1) Controls PMV super heat in heating operation |
| | TE1 | (Connector CN520: Green) 1) Controls defrost in heating operation 2) Controls outdoor fan in heating operation |
| | TE2 | (Connector CN521: Red) 1) Controls exchange function between main and sub exchangers |
| | TK1, TK2, TK3, TK4, TK5 | (TK1 Connector CN531: Black, TK2 Connector CN532: Green, TK3 Connector CN533: Red, TK4 Connector CN534: Yellow, TK5 Connector CN535: Red) 1) Judges oil level of the compressor |
| | TL | (Connector CN523: White) 1) Detects under cool in cooling operation |
| | TO | (Connector CN507: Yellow) 1) Detects outside temperature |
| Pressure sensor | High pressure sensor | (Connector CN501: Red) 1) Detects high pressure and controls compressor capacity 2) Detects high pressure in cooling operation, and controls the fan in low ambient cooling operation 3) Detects under cool in indoor unit in heating operation |
| | Low pressure sensor | (Connector CN500: White) 1) Detects low pressure in cooling operation and controls compressor capacity 2) Detects low pressure in heating operation, and controls the super heat |
| Heater | Compressor case heater | (Compressor 1 Connector CN331: White, Compressor 2 Connector CN332: Blue, Compressor 3 Connector CN333: Black) 1) Prevents liquid accumulation to compressor |
| | Accumulator case heater | (Connector CN334: Red) 1) Prevents liquid accumulation to accumulator |
| Balance pipe | 1) Oil balancing in each outdoor unit | |

Outdoor Unit (8, 10HP)

Model: MMY-MAP0804*, MMY-MAP1004*

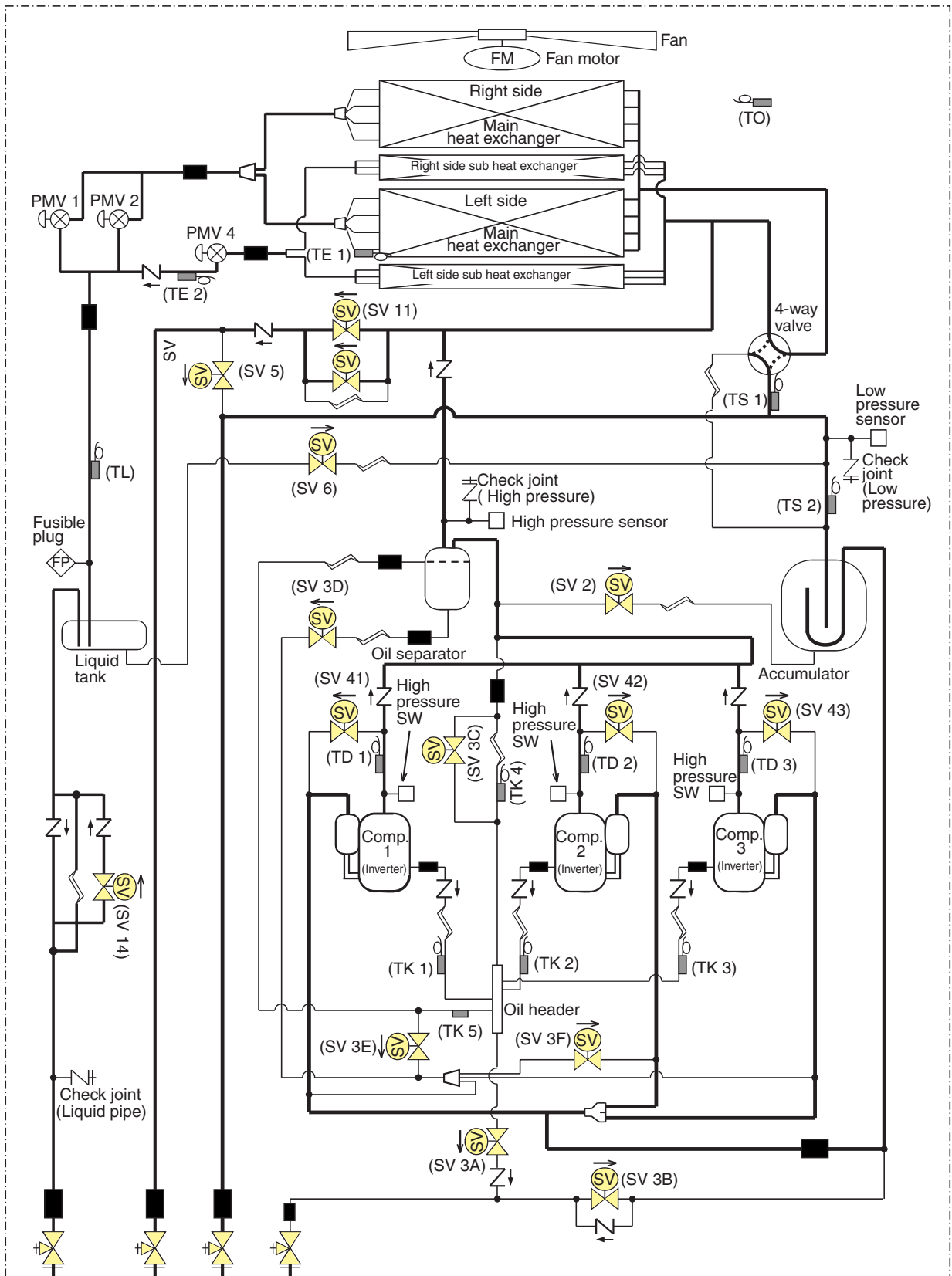


Liquid side service valve
 Discharge gas side service valve
 Suction gas side service valve
 Balance pipe service valve

| Symbol | | | | | | | |
|--------|----------------|----------------|-------------|-------------|----------|---------------|-------------|
| Symbol | Solenoid valve | Capillary tube | Check valve | Check joint | Strainer | Tempe. sensor | Distributor |

Outdoor Unit (12, 14HP)

Model: MMY-MAP1204*, MMY-MAP1404*



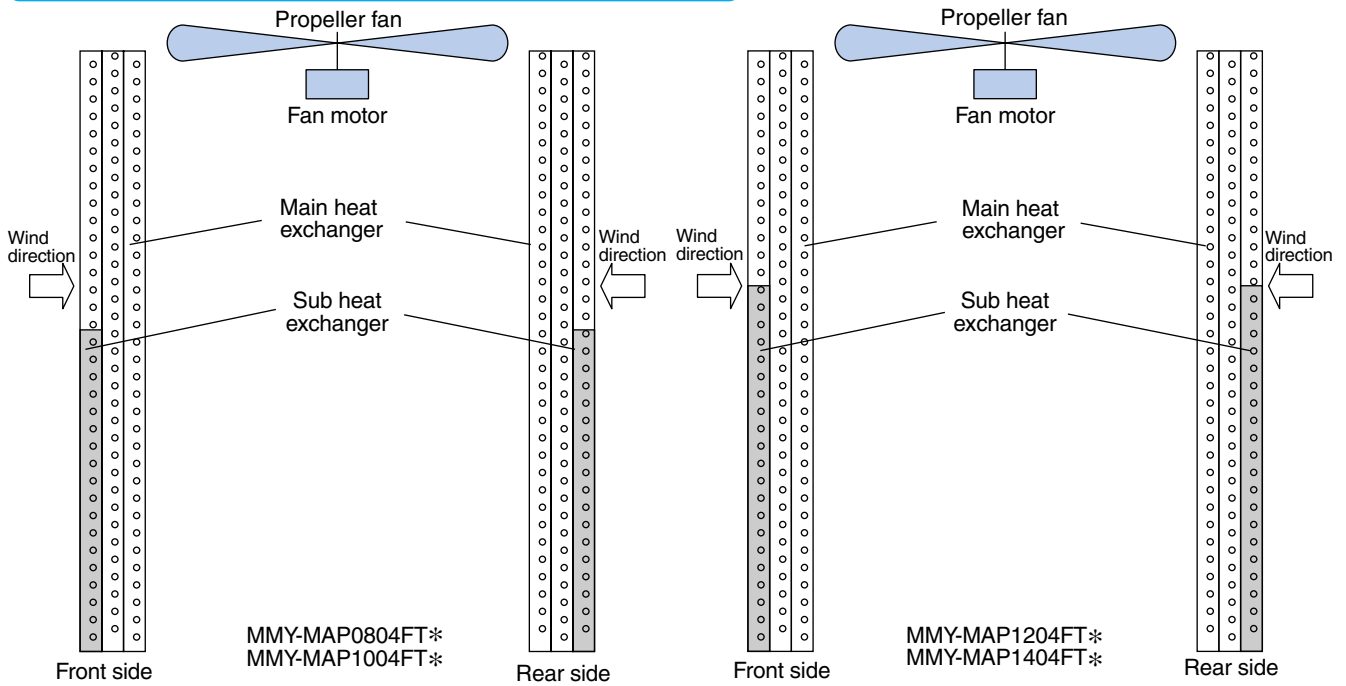
Liquid side service valve
 Discharge gas side service valve
 Suction gas side service valve
 Balance pipe service valve

| Symbol | | | | | | | |
|--------|----------------|----------------|-------------|-------------|----------|---------------|-------------|
| Symbol | Solenoid valve | Capillary tube | Check valve | Check joint | Strainer | Tempe. sensor | Distributor |

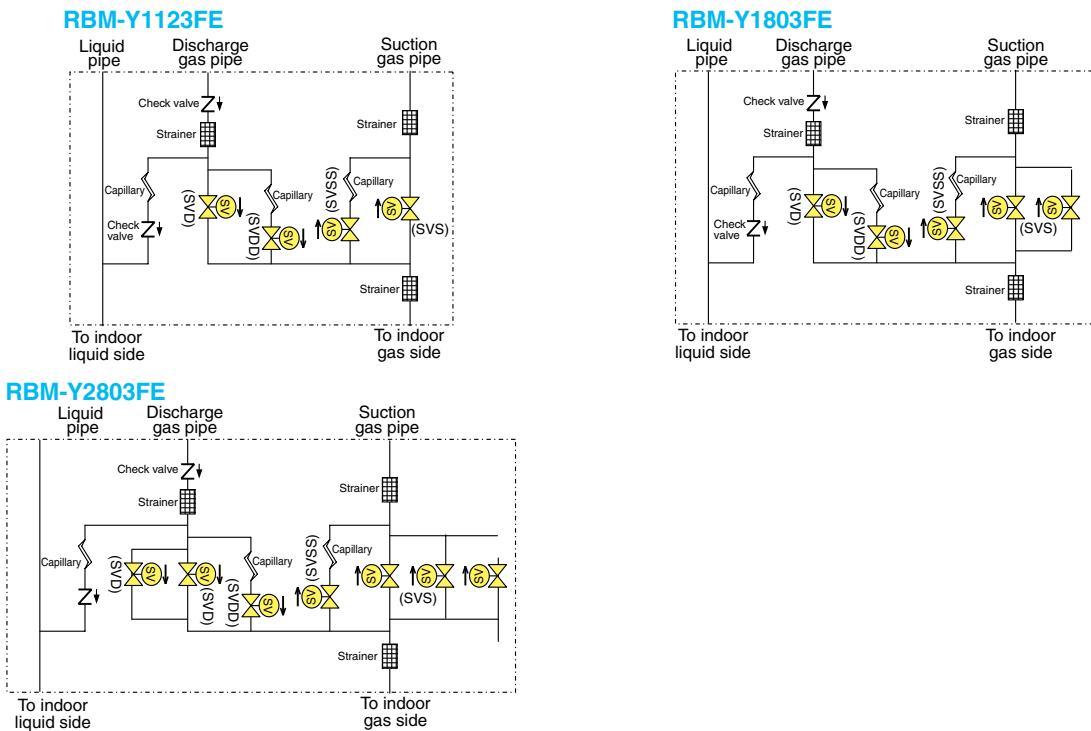
Explanation of Functional Parts

| Functional part name | Functional outline |
|----------------------|--|
| Solenoid valve | SV3A (Connector CN321: White) 1) Supplies oil reserved in the oil header during ON time. |
| | SV3B (Connector CN321: White) 1) Returns oil supplied in the balance pipe to the compressor. |
| | SV3C (Connector CN321: White) 1) Pressurizes oil reserved in the oil header during ON time. |
| | SV3D (Connector CN322: White) 1) Reserves oil in the oil separator during OFF time. 2) Returns oil reserved in the oil separator to the compressor during ON time. |
| | SV3E (Connector CN322: White) 1) Turns on during operation and balances oil between compressors. |
| | SV3F (Connector CN323: White) 1) Controls oil level balances between compressors. |
| | SV2 (Connector CN311: White) Hot gas bypass 1) Low pressure release function 2) High pressure release function 3) Gas balance function during stop time |
| | SV41 SV42 SV43 (SV41 Connector CN312: Blue, SV42 Connector CN312: Blue, SV43 Connector CN313: Red) Start compensation valve of compressor 1) For gas balance start 2) High pressure release function 3) Low pressure release function |
| | SV5 (Connector CN314: White) 1) Gas balance function at defrost operation when the number of heating indoor units increased/decreased 2) Gas recovery function in the discharge gas pipes when the single cooling operation |
| | SV6 (Connector CN315: White) 1) Liquid bypass function for discharge temperature release (cooling bypass function) 2) Refrigerant recovery function from the stopped follower unit |
| | SV11 (Connector CN319: White) To block discharge gas pipe (At single cooling or defrost operation) |
| | SV14 (Connector CN336: Yellow) 1) To block the liquid line |
| 4-way valve | (Connector CN317: Blue) 1) Cooling/heating exchange 2) Reverse defrost 3) Exchange of main heat exchanger with auxiliary heat exchanger |
| Pulse motor valve | PMV1, 2 (Connector CN300, 301: White) 1) Super heat control function at single heating, collective heating operation 2) Under cool control function in single cooling operation |
| | PMV4 (Connector CN303: Red) 1) Controls flow volume of the auxiliary heat exchanger at collective operation 2) Preventive function for high-pressure rising in single heating operation |
| Oil separator | 1) Prevention for rapid decreasing of oil (Decreases oil flowing to the cycle) 2) Reserve function of surplus oil |
| Temp. Sensor | TD1, TD2, TD3 (TD1 Connector CN502: White, TD2 Connector CN503: Pink, TD3 Connector CN504: Blue) 1) Protection of compressor discharge temp. |
| | TS1 (Connector CN505: White) 1) Controls PMV1, 2 super heat in single heating / collective heating |
| | TS2 (Connector CN506: Black) 1) Controls indoor oil recovery at single cooling, collective cooling operation 2) Detects overheat of the cycle |
| | TE1 (Connector CN520: Green) 1) Controls defrost in single / collective heating operation 2) Controls outdoor fan in single / collective heating operation |
| | TE2 (Connector CN521: Red) 1) Controls flow volume of the auxiliary heat exchanger at collective operation |
| | TK1, TK2 TK3, TK4 TK5 (TK1 Connector CN531: Black, TK2 Connector CN532: Green, TK3 Connector CN533: Red, TK4 Connector CN534: Yellow, TK5 Connector CN535: Red) 1) Judges oil level of the compressor |
| | TL (Connector CN523: White) 1) Detects under cool at single operation / collective cooling operation |
| | TO (Connector CN507: Yellow) 1) Detects outside temperature |
| Pressure sensor | High pressure sensor (Connector CN501: Red) 1) Detects high pressure and controls compressor capacity 2) Detects high pressure at single operation / collective cooling operation, and controls the fan in low ambient cooling operation 3) Detects under cool in indoor unit at single operation / collective heating operation 4) Controls rps of outdoor fan at collective cooling operation |
| | Low pressure sensor (Connector CN500: White) 1) Detects low pressure at single / collective cooling operation and controls compressor capacity 2) Detects low pressure at single / collective heating operation, and controls the super heat |
| Heater | Compressor case heater (Compressor 1 Connector CN331: White, Compressor 2 Connector CN332: Blue, Compressor 3 Connector CN333: Black) 1) Prevents liquid accumulation to compressor |
| | Accumulator case heater (Connector CN334: Red) 1) Prevents liquid accumulation to accumulator |
| Balance pipe | 1) Oil balancing in each outdoor unit |

Configuration of outdoor unit heat exchanger



Flow Selector Unit



| Functional parts name | | Function outline |
|-----------------------|------|--|
| Solenoid valve | SVD | (Discharge gas block valve) 1) High-pressure gas circuit at heating operation |
| | SVS | (Suction gas block valve) 1) Low-pressure gas circuit at cooling operation |
| | SVDD | (Pressure valve) 1) To increase pressure when No. of indoor heating units are increased |
| | SVSS | (Regulator valve) 1) To recover refrigerant in the stopped cooling thermo-OFF indoor unit 2) To decrease pressure when No. of indoor heating units are decreased |

<Exchange of operation mode>

For exchange between each operation mode, follow the table below: When “Momentary stop” is executed, the unit does not operate for 3 minutes after stop of operation before update.

| | | After exchange | | | |
|-----------------|-------------------------|-----------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | | Single cooling (OFF) | Collective cooling (ON) | Collective heating (ON) | Single heating (ON) |
| Before exchange | Single cooling (OFF) | | Operation continuation (OFF → ON) | Operation continuation (OFF → ON) | Momentary stop (OFF → ON) |
| | Collective cooling (ON) | Operation continuation (ON → OFF) | | Operation continuation (ON as it is) | Operation continuation (ON as it is) |
| | Collective heating (ON) | Momentary stop (ON → OFF) | Operation continuation (ON as it is) | | Operation continuation (ON as it is) |
| | Single heating (ON) | Momentary stop (ON → OFF) | Operation continuation (ON as it is) | Operation continuation (ON as it is) | |

Note) In the table, status of 4-way valve is indicated in parenthesis.

<Exchange unit valve ON-OFF list>

| Indoor operation mode | Control valve output outline of cooling/heating exchange unit (Operation standard) | | | |
|---|--|--------------------------------------|-------------------------------------|---------------------------------------|
| | SVD (High-pressure circuit valve) | SVDD (Pressure valve <For delay>) | SVS (Low-pressure circuit valve) | SVSS (Regulator valve <For delay>) |
| 1. Stop (Remote controller OFF) <When all the system stop> | OFF <OFF> | OFF <OFF> | OFF <OFF> | ON <OFF> |
| 2. Cooling thermo OFF | OFF | OFF | OFF | ON |
| 3. Cooling thermo ON | OFF | OFF | ON | ON |
| 4. Heating thermo OFF | ON | OFF | OFF | OFF |
| 5. Heating thermo ON | | | | |
| 6. During detection of [E04] error | OFF | ON | OFF | OFF |

| Main remote controller display | Check code name |
|--------------------------------|---|
| E01 | Communication error between indoor and remote controller (Detected at remote controller side) |
| E02 | Sending error of remote controller |
| E03 | Communication error between indoor and remote controller (Detected at indoor side) |
| E04 | Communication circuit error between indoor and outdoor (Detected at indoor side) |
| E06 | Decrease of No. of indoor units |
| E07 | Communication circuit error of indoor and outdoor (Detected at outdoor side) |
| E08 | Duplicated indoor addresses |
| E09 | Duplicated master remote controllers |
| E10 | Communication error in indoor P.C. B ass'y |
| E12 | Automatic address start error |
| E15 | No indoor automatic address |
| E16 | No. of connected indoor units / Capacity over |
| E18 | Communication error between indoor header and follower units |
| E19 | Outdoor header units quantity error |
| E20 | Other line connected during automatic address |
| E23 | Sending error in communication between outdoor units |
| E25 | Duplicated follower outdoor addresses |
| E26 | Decrease of No. of connected outdoor units |
| E28 | Follower outdoor error |
| E31 | IPDU communication error |
| F01 | Indoor TCJ sensor error |
| F02 | Indoor TC2 sensor error |
| F03 | Indoor TC1 sensor error |
| F04 | TD1 sensor error |
| F05 | TD2 sensor error |
| F06 | TE1 sensor error |
| F07 | TL sensor error |
| F08 | TO sensor error |
| F10 | Indoor TA sensor error |
| F12 | TS1, TS2 sensor error |
| F13 | TH sensor error |
| F15 | Outdoor temp sensor misconnecting (TE, TL) |
| F16 | Outdoor pressure sensor misconnecting (Pd, Ps) |
| F23 | Ps sensor error |
| F24 | Pd sensor error |
| F29 | Indoor other error |
| F31 | Outdoor EEPROM error |
| H01 | Compressor break down |
| H02 | Magnet switch error Overcurrent relay operation Compressor error (lock) |
| H03 | Current detect circuit system error |

NOTE:1 F12 (TS2) SHRM only

NOTE:2 SMMS-i only

| Main remote controller display | Check code name |
|--------------------------------|--|
| F11 | Indoor TF sensor error |
| F22 | TD3 sensor error |
| H05 | TD1 sensor miswiring (incomplete insertion)s |
| H15 | TD2 sensor miswiring (incomplete insertion) |

| Main remote controller display | Check code name |
|--------------------------------|--|
| H04 | Comp 1 case thermo operation |
| H06 | Low pressure protective operation |
| H07 | Oil level down detective protection |
| H08 | Oil level detective temp sensor error |
| H14 | Comp 2 case thermo operation |
| H16 | Oil level detective circuit error Magnet switch error Overcurrent relay operation |
| L03 | Duplicated indoor header units |
| L04 | Duplicated outdoor line addresses |
| L05 | Duplicated indoor units with priority (Displayed on indoor unit with priority) |
| L06 | Duplicated indoor units with priority (Displayed in unit other than indoor unit with priority) |
| L07 | Group line in individual indoor unit |
| L08 | Indoor group/Address unset |
| L09 | Indoor capacity unset |
| L10 | Outdoor capacity unset |
| L17 | Inconsistency error of outdoor units |
| L18 | FS unit error |
| L20 | Duplicated central control addresses |
| L28 | Over No. of connected outdoor units |
| L29 | No. of IPDU error |
| L30 | Auxiliary interlock in indoor unit |
| L31 | IC error |
| P01 | Indoor fan motor error |
| P03 | Discharge temp TD1 error |
| P04 | High-pressure SW detection error |
| P05 | Phase-missing detection / Phase order error |
| P07 | Heat sink overheat error |
| P10 | Indoor overflow error |
| P12 | Indoor fan motor error |
| P13 | Outdoor liquid back detection error |
| P15 | Gas leak detection |
| P17 | Discharge temp TD2 error |
| P19 | 4-way valve inverse error |
| P20 | High-pressure protective operation |
| P22 | Outdoor fan IPDU error |
| P26 | G-TR short protection error |
| P29 | Comp position detective circuit system error |
| P31 | Other indoor unit error (Group follower unit error) |
| — | Error in indoor group |
| — | AI-NET communication system error |
| — | Duplicated network adaptors |

| Main remote controller display | Check code name |
|--------------------------------|--|
| H25 | TD3 sensor miswiring (incomplete insertion) |
| P15 | Gas leakdetection (TS1 condition) Gas leak detection (TD condition) |
| P18 | Discharge temperature TD3 error |

| Wired remote controller display | Check code name |
|---------------------------------|---|
| E01 | Communication error between indoor and remote controller (Detected at remote controller side) |
| E02 | Remote controller sending error |
| E03 | Communication error between indoor and remote controller (Detected at indoor side) |
| E04 | Indoor/outdoor communication circuit error (Detected at indoor side) |
| E06 | Decreased number of indoor units |
| — | Indoor/outdoor communication circuit error (Detected at outdoor side) [E07] |
| E08 | Duplicated indoor addresses |
| E09 | Duplicated master remote controllers |
| E10 | Communication error between indoor P.C. board assembly |
| E12 | Automatic address start error |
| E15 | No corresponding indoor unit during automatic address |
| E16 | No. of connected indoor units / Capacity over |
| E18 | Communication error between indoor header and follower units |
| E19 | Outdoor unit quantity error |
| E20 | Other line unit connected during automatic address |
| E23 | Communication sending error |
| E25 | Duplicated outdoor follower address setup |
| E31 | IPDU communication error |
| F01 | Indoor TCJ sensor error |
| F02 | Indoor TC2 sensor error |
| F03 | Indoor TC1 sensor error |
| F04 | TD1 sensor error |
| F06 | TE1 sensor error |
| F07 | TL sensor error |
| F08 | TO sensor error |
| F10 | Indoor TA sensor error |
| F12 | TS1 sensor error |
| F13 | TH sensor error |
| F15 | Outdoor temp sensor miscabling (TE1, TL) |
| F16 | Outdoor pressure sensor miscabling (Pd, Ps) |
| F23 | Ps sensor error |
| F24 | Pd sensor error |
| F29 | Indoor other error |
| F31 | Outdoor EEPROM error |
| H01 | Compressor breakdown |
| H02 | Compressor error (lock) |

| Wired remote controller display | Check code name |
|--|--|
| H03 | Current detection circuit system error |
| H04 | Compressor 1 case thermo operation |
| H06 | Low-pressure protective operation |
| L03 | Duplicated indoor center units |
| L04 | Duplicated outdoor line address |
| L05 | Duplicated indoor units with priority (Displayed on indoor unit with priority) |
| L06 | Duplicated indoor units with priority (Displayed on the unit other than indoor unit with priority) |
| L07 | Group line in individual indoor unit. |
| L08 | Indoor group / address unset |
| L09 | Indoor capacity unset |
| L10 | Outdoor capacity unset |
| L20 | Duplicated central control addresses |
| L29 | IPDU quantity error |
| L30 | Interlock in indoor unit from outside |
| — | Extended IC (Integrated Circuit) error (Detected at outdoor unit side) [L31] |
| P01 | Indoor fan motor error |
| P03 | Discharge temp TD1 error |
| P04 | Actuation of high-pressure SW |
| P07 | Heat sink overheat error |
| P10 | Indoor overflow error |
| P12 | Indoor fan motor error |
| <p>The standard ducted unit air conditioner utilizes a direct current (DC) indoor fan motor that features current limiting protection. In the event power is not isolated prior to service, the protective control circuit will activate and stop the unit operating.</p> <p>The check code P12 will be displayed on the remote controller once service work has been completed, this code can be cleared by switching off then on the electrical isolation device of the indoor unit and pressing the operation stop button on the remote controller to reset the system.</p> | |
| P13 | Outdoor liquid back detection error |
| P15 | Gas leak detection (TS1 condition) Gas leak detection (TD condition) |
| P17 | Discharge temp TD2 error |
| P19 | 4-way valve operation error |
| P20 | High-pressure protective operation |
| P22 | Outdoor fan IPDU error |
| P26 | G-Tr short-circuit protection error |
| P29 | Compressor position detection circuit error |
| P31 | Other indoor error (Group follower unit error) |

| Check code | Description of error | Check code | Description of error |
|------------|--|------------|---|
| E06 | Indoor unit initially communicating normally fails to return signal (reduction in number of indoor units connected). | H05 | Wiring/installation error or detachment of outdoor discharge temperature sensor (TD1) has been detected. |
| E07 | Signal cannot be transmitted to indoor units (→ indoor units left without communication from outdoor unit). | H06 | Low pressure (Ps) sensor detects abnormally low operating pressure. |
| | | H07 | Temperature sensor for oil level detection (TK1-5) detects abnormally low oil level. |
| E08 | More than one indoor unit is assigned same address (also detected at indoor unit end). | H08 | Temperature sensor for oil level detection (TK1-5) has been open/short-circuited. |
| E12 | <ul style="list-style-type: none"> Indoor automatic address setting is started while automatic address setting for equipment in other refrigerant line is in progress. Outdoor automatic address setting is started while automatic address setting for indoor units is in progress. | H15 | Wiring/installation error or detachment of outdoor discharge temperature sensor (TD2) has been detected. |
| | | H16 | No temperature change is detected by temperature sensor for oil level detection (TK1-5) despite compressor having been started. |
| E15 | Indoor unit fails to communicate while automatic address setting for indoor units is in progress. | H25 | Wiring/installation error or detachment of outdoor discharge temperature sensor (TD3) has been detected. |
| E16 | Combined capacity of indoor units is too large (more than 135% of combined capacity of outdoor units). | L04 | Identical refrigerant line address has been assigned to outdoor units belonging to different refrigerant piping systems. |
| E19 | There is no or more than one outdoor header unit in one refrigerant line. | L05 | More than one indoor unit has been set up as priority indoor unit. |
| E20 | Indoor unit from other refrigerant line is detected while indoor automatic address setting is in progress. | L06 | More than one indoor unit has been set up as priority indoor unit. |
| E23 | Signal cannot be transmitted to other outdoor units. | L08 | Address setting has not been performed for one or more indoor units (also detected at indoor end). |
| E25 | There is duplication in outdoor addresses set manually. | L10 | Outdoor unit capacity has not been set (after P.C. board replacement). |
| E26 | Follower outdoor unit initially communicating normally fails to do so (reduction in number of follower outdoor units connected). | L17 | Old model outdoor unit (prior to 3 series) has been connected. |
| E28 | Outdoor header unit detects fault relating to follower outdoor unit (detail displayed on follower outdoor unit). | L18 | Cooling/heating cycle error resulting from piping error is detected. |
| E31 | There is no communication between IPDUs (P.C. boards) in inverter box. Outdoor I/F board error When power supply was turned on within 30 seconds (before electric discharge of capacitor) after power supply was reset | L28 | More than 3 outdoor units have been connected. |
| | | L29 | There are insufficient number of IPDUs (P.C. boards) in inverter box. |
| F04 | Outdoor discharge temperature sensor (TD1) has been open/short-circuited. | L30 | Indoor unit has been shut down for external error input in one refrigerant line (detected by indoor unit). |
| F05 | Outdoor discharge temperature sensor (TD2) has been open/short-circuited. | L31 | There is part failure in P.C. board (I/F). |
| F06 | Outdoor heat exchanger temperature sensors (TE1, TE2) have been open/short-circuited. | P03 | Outdoor discharge temperature sensor (TD1) has detected abnormally high temperature. |
| F07 | Outdoor liquid temperature sensor (TL) has been open/short-circuited. | P05 | Open phase is detected when power is turned on. Inverter DC voltage is too high (overvoltage) or too low (undervoltage). |
| F08 | Outdoor outside air temperature sensor (TO) has been open/short-circuited. | P07 | Temperature sensor built into IGBT (TH) detects overheating. |
| F12 | Outdoor suction temperature sensor (TS1, TS2) has been open/short-circuited. | P10 | Indoor unit has been shutdown in one refrigerant line due to detection of overflow (detected by indoor unit). |
| F15 | Wiring error in outdoor temperature sensors (TE1, TL) has been detected. | P13 | State of refrigerant cycle circuit indicates liquid backflow operation. |
| F16 | Wiring error in outdoor pressure sensors (Pd, Ps) has been detected. | P15 | Outdoor suction temperature sensor (TS1) detects sustained and repeated high temperatures that exceed standard value. |
| F22 | Outdoor discharge temperature sensor (TD3) has been open/short-circuited. | P17 | Outdoor discharge temperature sensor (TD2) detects abnormally high temperature. |
| F23 | Output voltage of low pressure sensor (Ps) is zero. | P18 | Outdoor discharge temperature sensor (TD3) detects abnormally high temperature. |
| F24 | Output voltage of high pressure sensor (Pd) is zero or provides abnormal readings when compressors have been turned off. | P19 | Abnormality in refrigerating cycle is detected during heating operation. |
| | | P20 | High pressure (Pd) sensor detects high pressure that exceeds standard value. |
| F31 | Outdoor EEPROM is faulty (alarm and shutdown for header unit and continued operation for follower unit) | | |

(Errors detected by IPDU featuring in SMMS-i standard outdoor unit - typical examples)

| Check code | Description of error | Check code | Description of error |
|------------|---|------------|---|
| F13 | Temperature sensor built into indoor IGBT (TH) has been open/short-circuited. | P04 | High-pressure SW is activated. |
| H01 | Inverter current (Idc) detection circuit detects overcurrent. | P07 | Temperature sensor built into IGBT (TH) detects overheating. |
| H02 | Compressor lockup is detected | P22 | Outdoor fan IPDU detects error. |
| H03 | Abnormal current is detected while inverter compressor is turned off. | P26 | Short-circuit protection for compressor motor driver circuit components is activated (momentary overcurrent). |
| | | P29 | Compressor motor position detection error is detected. |

Note) The above check codes are examples only, and different check codes may be displayed depending on the outdoor unit configuration (e.g. a Super Modular multi system). For details, see the service manual for the outdoor unit.

(Error detected by indoor unit)

| Check code | Description of error | Check code | Description of error |
|------------|---|------------|--|
| E03 | Communication from remote controller or network adaptor has been lost (so has central control communication). | L03 | There is more than one header unit in group. |
| | | L07 | There is at least one stand-alone indoor unit to which group control cable is connected. |
| E04 | Signals are not being received from outdoor unit. | L08 | Address setting has not been performed for one or more indoor units (also detected at outdoor unit end). |
| E08 | Indoor unit detects address identical to its own. | | |
| E10 | MCU communication between main controller and motor microcontroller is faulty. | L09 | Capacity setting has not been performed for indoor unit. |
| E18 | Periodic communication between indoor header and follower units cannot be maintained. | L20 | There is duplication in central control address setting. |
| F01 | Heat exchanger temperature sensor (TCJ) has been open/short-circuited. | L30 | Unit shutdown has been caused by external error input (CN80). |
| F02 | Heat exchanger temperature sensor (TC2) has been open/short-circuited. | F17 | Open/Short of outside air suction temperature sensor (TOA) was detected. |
| F03 | Heat exchanger temperature sensor (TC1) has been open/short-circuited. | F18 | Open/Short of indoor air suction temperature sensor (TRA) was detected. |
| F10 | Ambient temperature sensor (TA) has been open/short-circuited. | P01 | Indoor AC fan error is detected (activation of fan motor thermal relay). |
| | | P10 | Float switch has been activated. |
| F11 | Discharge temperature sensor (TF) has been open/short-circuited. | P12 | Indoor DC fan error (e.g. overcurrent or lock-up) is detected. |
| F29 | Indoor EEPROM is abnormal (some other error may be detected). | | |
| L02 | In case that outdoor unit model is different (Not corresponded) | P31 | Follower unit cannot be operated due to header unit alarm (E03/L03/L07/L08). |

(Error detected by main remote controller)

| Check code | Description of error |
|------------|---|
| E01 | Signals cannot be received from indoor unit; master remote controller has not been set (including two remote controller control). |
| E02 | Signals cannot be transmitted to indoor unit. |
| E09 | Both remote controllers have been set as master remote controller in two remote controller control (alarm and shutdown for header unit and continued operation for follower unit) |

(Error detected by central control device)

| Check code | Description of error | Check code | Description of error |
|------------|---|------------|---|
| C05 | Central control device is unable to transmit signal due to duplication of central control device. | — | Multiple network adapters are connected to remote controller communication line. |
| C06 | Central control device is unable to receive signal. | P30 | Group follower unit is faulty (unit No. and above detail [***] displayed on main remote controller) |
| C12 | Device connected to general-purpose device control interface for TCC-LINK is faulty. | | |

Note) The same error, e.g. a communication error, may result in the display of different check codes depending on the device that detects it. Moreover, check codes detected by the main remote controller/central control device do not necessarily have a direct impact on air conditioner operation.

Switch (SW08) Set Up of The Outdoor Unit <MiNi-SMMS Only>

When using the outdoor unit under the following conditions, it is necessary to set up DIP switch on the outdoor unit interface P.C. board.

Cautions

When anyone of the following condition is applied, set up DIP switch.

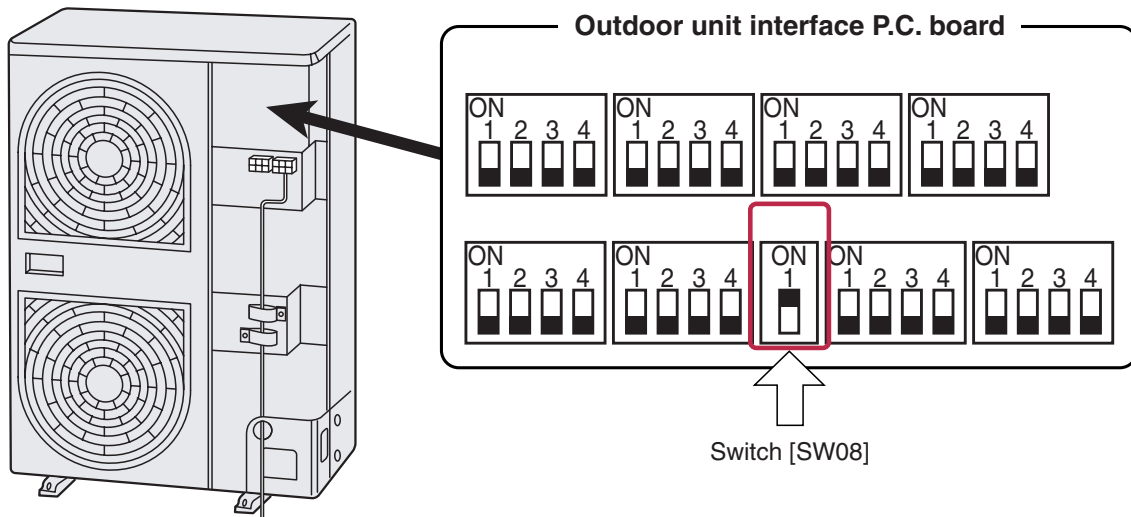
1. When using PMV Kit in the Mini-SMMS system
2. When using the indoor unit under high humidity condition

[Reference]

Indoor side : 27°C dry bulb temperature
24°C wet bulb temperature
Operation time 4 hours or more.

1 Setup method

- Turn on DIP switch [SW08] on the interface P.C. board of the outdoor unit.



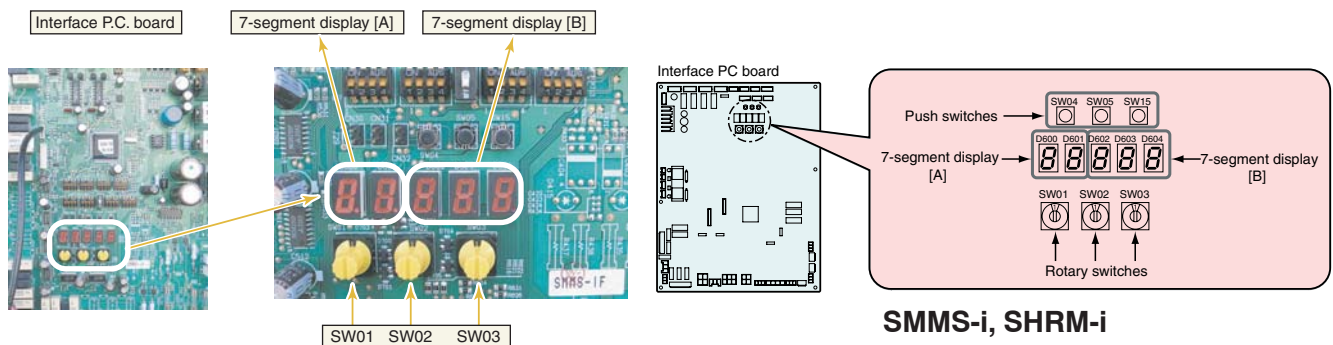
After turning on the main power of the indoor units and outdoor unit in the refrigerant line to be executed with a test operation, check the following items in outdoor and each indoor unit.

(After turning on the main power, be sure to check in order of indoor unit → outdoor unit.)

If the power supply of the outdoor unit has been firstly turned on, [E19] appears on the 7-segment display on the interface P.C. board until the power supply of the indoor unit is turned on. However it is not an error.

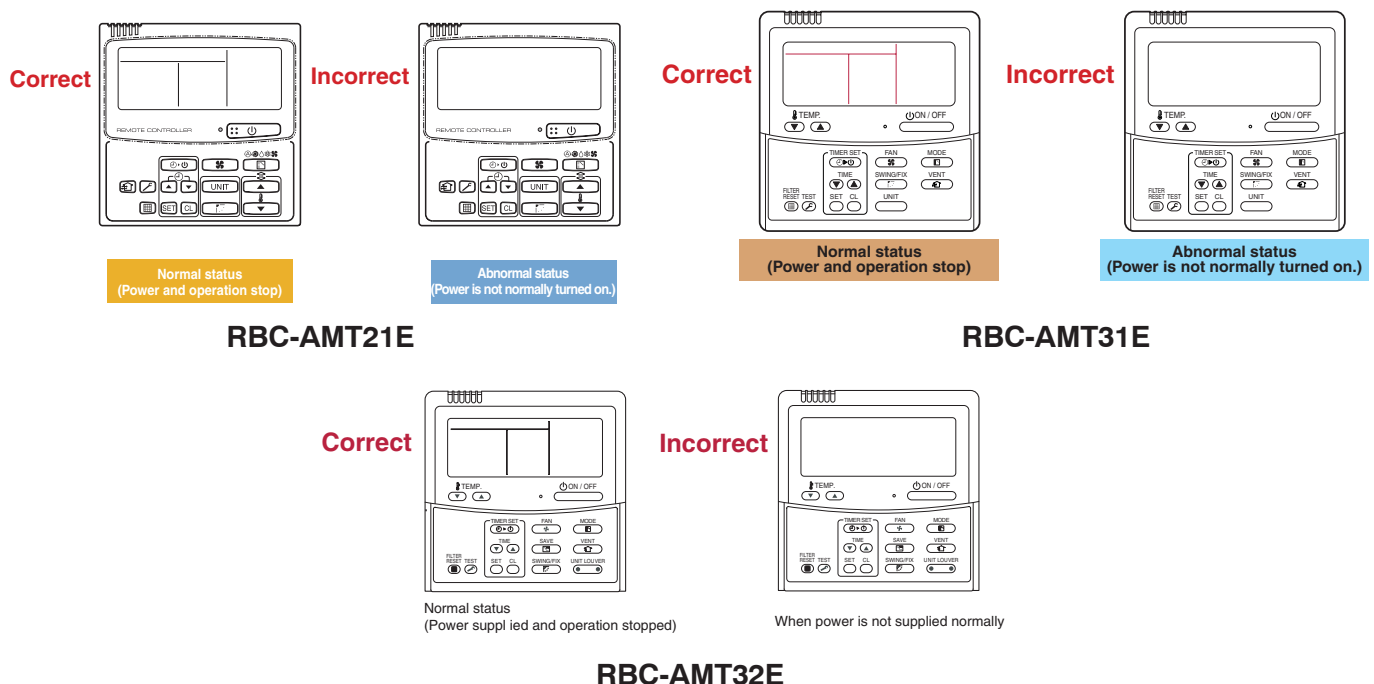
<Check on outdoor unit>

1. Check that all the rotary switches, SW01, SW02, and SW03 on the interface P.C. board of the outdoor unit are set up to "1".
2. If other error code is displayed on 7-segment [B], remove the cause of trouble referring to "**Troubleshooting**".
3. **Check that [L08] is displayed on 7-segment display [B]** on the interface P.C. board of the outdoor unit.
(L08: Indoor address unset up)
(If the address setup operation has already finished in service time, etc, the above check code is not displayed, and only [U1] is displayed on 7-segment display [A].)



<Check on indoor unit>

1. Display check on remote controller (In case of wired remote controller)
Check that a frame as shown in the following left figure is displayed on LC display section of the remote controller.



If a frame is not displayed as shown in the above right figure, the power of the remote controller is not normally turned on.

Therefore check the following items.

- Check power supply of indoor unit.
- Check wiring between indoor unit and remote controller.
- Check whether there is cutoff of cable around the indoor control P.C. board or not, and check connection failure of connectors.
- Check failure of transformer for the indoor microcomputer.
- Check indoor control P.C. board failure.

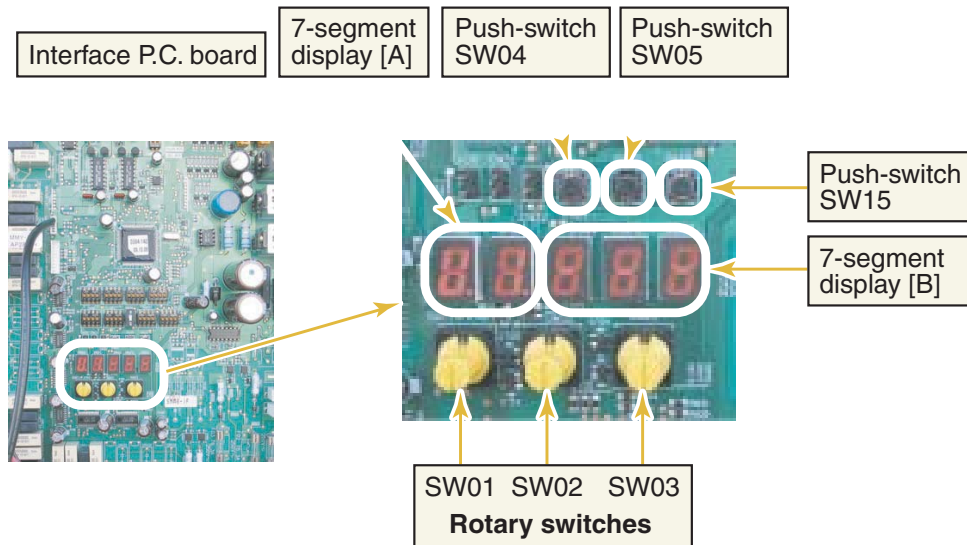
After power-ON, set up the indoor address from the interface P.C. board of the outdoor unit.
(The address setup operation cannot be performed by power-ON only.)

Cautions

1. It requires approx. 5 minutes usually for 1 line to automatically set up address. However in some cases, it may require maximum 10 minutes.
2. It is unnecessary to operate the air conditioner for address setup.
3. Manual address setup is also available besides automatic setup.
Automatic address: Setup from SW15 on the interface P.C. board of the outdoor unit
Manual address: Setup from the wired remote controller.
(For details, refer to section “Address setup procedure”)

Address Setup and Check Procedure

| Procedure | Item | Operation and check contents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|--------------------------------------|---|------|--------------------------|-------|--|-------------------|--|------|------|------|-----|-----|-----------------|---|---|---|-------------|------|-------------------------------|---|---|---|--------------------------|-------|-------------------------------|---|---|---|--------------------------|--|
| 1 | Indoor unit power-ON | Turn on power of indoor unit in refrigerant line to which address is set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Outdoor unit power-ON | Turn on power of all the outdoor units in refrigerant line to which address is set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 7-segment display check | Check that [L08] is displayed on 7-segment display [B] on the interface P.C. board of the outdoor unit in the system to which address is set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Address setup start | Confirm the corresponding items in “Address setup procedure”, and then set up address according to the operation procedure. (Be sure that the setup operation may differ in group control or central control.) Note) Address cannot be set up if switches are not operated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Display check after setup | After address setup, [U1] [] are displayed in 7-segment display section. If an error code is displayed in 7-segment display [B], remove the cause of trouble referring to “Troubleshooting”. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | System information check after setup | Using 7-segment display function, check the system information of the scheduled system. (This check is executed on the interface P.C. board of the outdoor unit.) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Rotary switch setup</th> <th colspan="2">7-segment display</th> </tr> <tr> <th>SW01</th> <th>SW02</th> <th>SW03</th> <th>[A]</th> <th>[B]</th> </tr> </thead> <tbody> <tr> <td>System capacity</td> <td>1</td> <td>2</td> <td>3</td> <td>[No. of HP]</td> <td>[HP]</td> </tr> <tr> <td>No. of connected outdoor unit</td> <td>1</td> <td>3</td> <td>3</td> <td>[Connected No. of units]</td> <td>[P]</td> </tr> <tr> <td>No. of connected indoor units</td> <td>1</td> <td>4</td> <td>3</td> <td>[Connected No. of units]</td> <td></td> </tr> </tbody> </table> <p>After the above checks, return rotary switches SW01, SW02, SW03 to 1/1/1.</p> | | Rotary switch setup | | | 7-segment display | | SW01 | SW02 | SW03 | [A] | [B] | System capacity | 1 | 2 | 3 | [No. of HP] | [HP] | No. of connected outdoor unit | 1 | 3 | 3 | [Connected No. of units] | [P] | No. of connected indoor units | 1 | 4 | 3 | [Connected No. of units] | |
| | Rotary switch setup | | | 7-segment display | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SW01 | SW02 | SW03 | [A] | [B] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System capacity | 1 | 2 | 3 | [No. of HP] | [HP] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of connected outdoor unit | 1 | 3 | 3 | [Connected No. of units] | [P] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. of connected indoor units | 1 | 4 | 3 | [Connected No. of units] | | | | | | | | | | | | | | | | | | | | | | | | | | | |



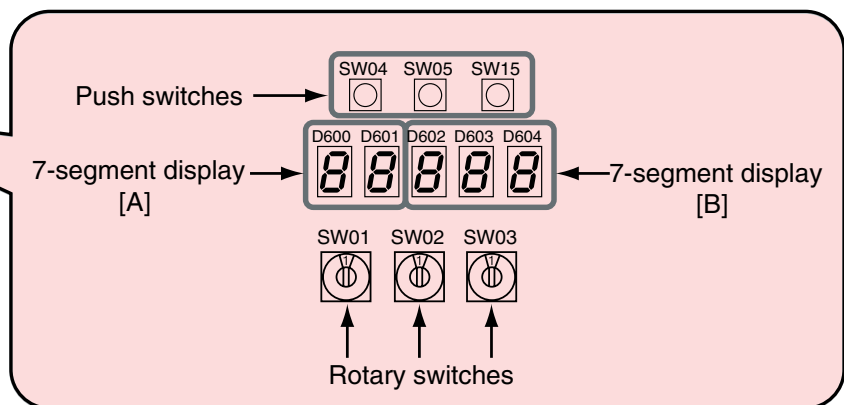
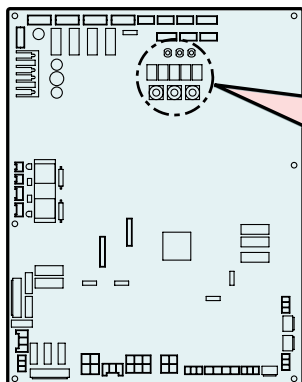
Precautions

1. Address setup is not performed simply by turning on the power supply.
2. For indoor units, address setup can be done either by manual address setup or by automatic address setup:
Automatic address setup: Setup from SW15 on the interface PC board of the header unit
Manual address setup: Setup from the wired remote controller.
(For details, refer to “Address Setup Procedure.”)
3. Automatic setup usually takes about 5 minutes per line. In some cases, however, it may take up to 10 minutes.
4. It is unnecessary to operate the air conditioner to achieve address setup.

Address Setup and Check Procedure

| Procedure | Item | Operation and check contents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|--------------------------------------|---|------|-----------------------------|-------|--|-------------------|--|------|------|------|-----|-----|-----------------|---|---|---|------------------------|-------|-----------------------------------|---|---|---|-------------------|------|----------------------------------|---|---|---|-----------------------------|--|
| 1 | Indoor unit power-on | Turn on the power of the indoor unit for the refrigerant line for which the address is to be set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Outdoor unit power-on | Turn on the power of all the outdoor units for the refrigerant line for which the address is to be set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 7-segment display check | Check that “L08” is displayed on the 7-segment display [B] on the interface PC board of the header unit in the system where the address is to be set up. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Address setup start | Confirm the items in “Address Setup Procedure,” and then set up the address according to the operation procedure. (Be careful to note that the setup operation may differ in group control and central control systems.) Note: The address cannot be set up if switches are not operated. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Display check after setup | <ul style="list-style-type: none"> • After address setup, “U1” “ ” is displayed on the 7-segment display. • For follower outdoor units, “U2” to “U4” are displayed on the 7-segment display [A]. • If an error code is displayed on the 7-segment display [B], remove the cause of the problem referring to “TROUBLESHOOTING.” | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | System information check after setup | <p>Using the 7-segment display function, check the system information of the scheduled system. (This check is executed on the interface PC board of the header unit.)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Rotary switch setup</th> <th colspan="2">7-segment display</th> </tr> <tr> <th>SW01</th> <th>SW02</th> <th>SW03</th> <th>[A]</th> <th>[B]</th> </tr> </thead> <tbody> <tr> <td>System capacity</td> <td>1</td> <td>2</td> <td>3</td> <td>[Number of horsepower]</td> <td>[H P]</td> </tr> <tr> <td>Number of connected outdoor units</td> <td>1</td> <td>3</td> <td>3</td> <td>[Number of units]</td> <td>[P]</td> </tr> <tr> <td>Number of connected indoor units</td> <td>1</td> <td>4</td> <td>3</td> <td>[Number of connected units]</td> <td></td> </tr> </tbody> </table> <p>After the above checks, return rotary switches SW01, SW02, and SW03 to 1/1/1.</p> | | Rotary switch setup | | | 7-segment display | | SW01 | SW02 | SW03 | [A] | [B] | System capacity | 1 | 2 | 3 | [Number of horsepower] | [H P] | Number of connected outdoor units | 1 | 3 | 3 | [Number of units] | [P] | Number of connected indoor units | 1 | 4 | 3 | [Number of connected units] | |
| | Rotary switch setup | | | 7-segment display | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SW01 | SW02 | SW03 | [A] | [B] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System capacity | 1 | 2 | 3 | [Number of horsepower] | [H P] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of connected outdoor units | 1 | 3 | 3 | [Number of units] | [P] | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of connected indoor units | 1 | 4 | 3 | [Number of connected units] | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Interface PC board



Automatic Address Setup

Without central control : To the address setup procedure 1

With central control : To the address setup procedure 2

(However, go to the procedure 1 when the central control is performed in a single refrigerant line.)

SMMS, MiNi-SMMS

| (Example) | In case of central control in a single refrigerant line | In case of central control over refrigerant lines |
|--------------------------|---|---|
| Address setup procedure | To procedure 1 | To procedure 2 |
| Cable systematic diagram | | |

SHRM

| | In case of central control in a single refrigerant line | In case of central control over refrigerant lines |
|--------------------------|---|---|
| Address setup procedure | To procedure 1 | To procedure 2 |
| Cable systematic diagram | | |

SMMS-i, SHRM-i

| (Example) | When controlling a single refrigerant line centrally | When controlling 2 or more refrigerant lines centrally |
|---------------------------|--|--|
| Address setting procedure | To procedure 1 | To procedure 2 |
| System wiring diagram | | |

43 Automatic Address Setup (Continued)

<Address setup procedure 1>

1. Turn on power of indoor/outdoor units.
(In order of indoor → Outdoor)
2. After approx. 1 minute, check that **U. 1. L08 (U. 1. flash)** is displayed in 7-segment display section on the interface P.C. board of the outdoor unit.
3. Push **SW15** to start the setup of the automatic addressing.
(Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
4. When the count Auto **1 → Auto 2 → Auto 3** is displayed in 7 segment display section, and it changes from **U. 1. - - - (U. 1. flash)** to **U. 1. - - - (U. 1. light)**, the setup finished.
5. When performing an automatic address setup on a single refrigerant line with central control, connect relay connected between [U1, U2] and [U3, U4] terminals.

REQUIREMENT

- When a group control is performed over the multiple refrigerant lines, be sure to turn on the power supplies of all the indoor units connected in a group at the time of address setup.
- If turning on the power for each refrigerant line to set up address, a header indoor unit is set for each line. Therefore, an alarm code "L03" (Duplicated header indoor units) is output in operation after address setup. In this case, change the group address from the wired remote controller for only one outdoor unit is set up.

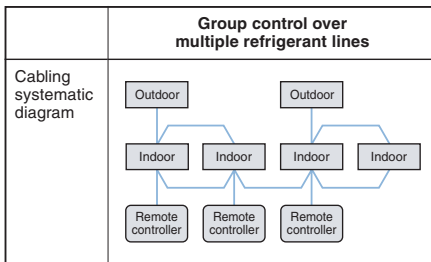
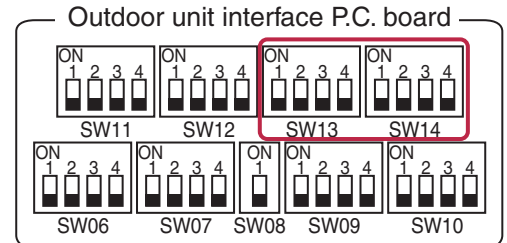
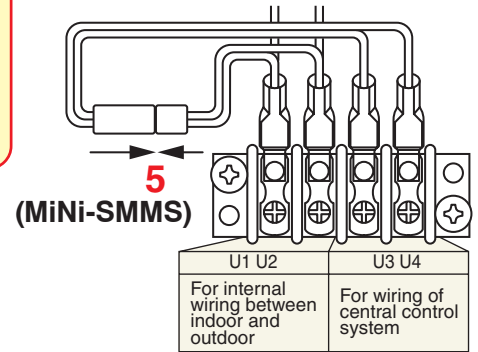
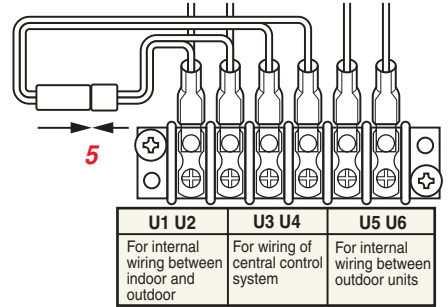
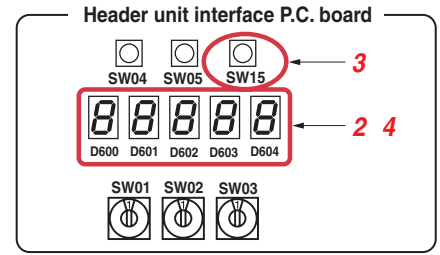
<Address setup procedure 2>

1. Using SW13 and 14 on the interface P.C. board of the outdoor unit in each system, set up the address for each system. (At shipment from factory: Set to Address 1)

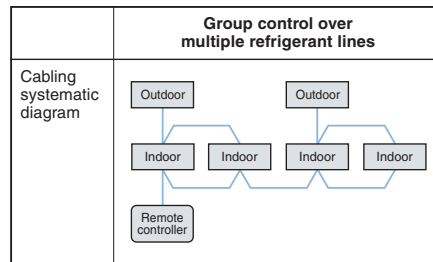
Note) Be careful not to duplicate addresses with the other refrigerant line.

NOTE

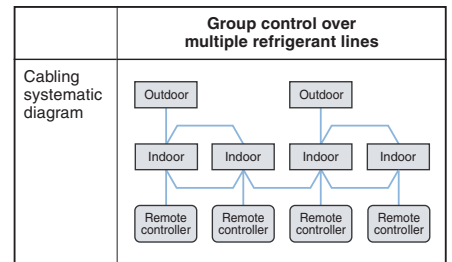
Be sure to set a unique address on each system. Do not use a same address as another system (refrigerant line) or DI/SDI series. (SHRM-i)



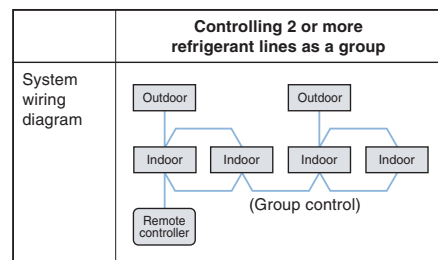
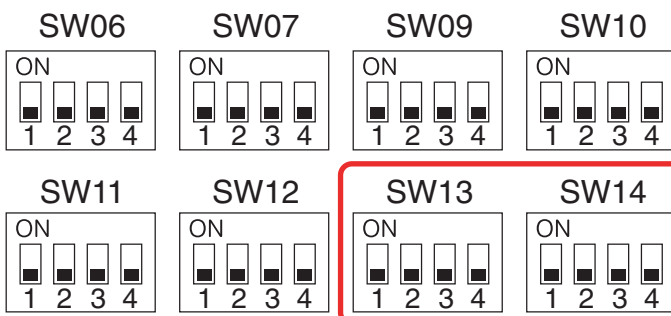
Mini-SMMS



SMMS



SHRM



SMMS-i, SHRM-i

Line address switch on outdoor interface P.C. board

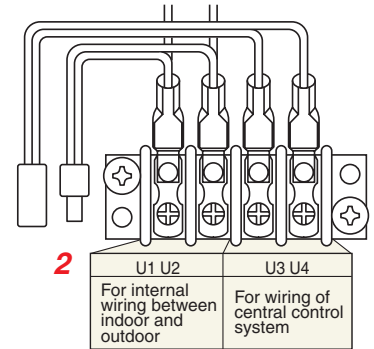
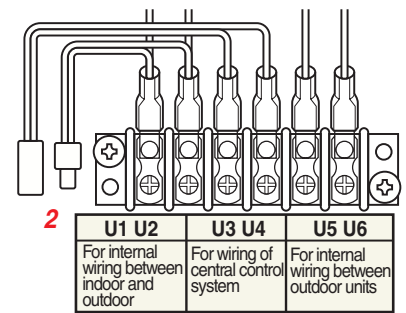
(○ : Switch ON, × : Switch OFF)

| Line address | SW13 | | | SW14 | | | | |
|--------------|------|---|---|------|---|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 1 | | | | × | × | × | × | × |
| 2 | | | | × | ○ | × | × | × |
| 3 | | | | × | × | ○ | × | × |
| 4 | | | | × | ○ | ○ | × | × |
| 5 | | | | × | × | × | ○ | × |
| 6 | | | | × | ○ | × | ○ | × |
| 7 | | | | × | × | ○ | ○ | × |
| 8 | | | | × | ○ | ○ | ○ | × |
| 9 | | | | × | × | × | × | ○ |
| 10 | | | | × | ○ | × | × | ○ |
| 11 | | | | × | × | ○ | × | ○ |
| 12 | | | | × | ○ | ○ | × | ○ |
| 13 | | | | × | × | × | ○ | ○ |
| 14 | | | | × | ○ | × | ○ | ○ |

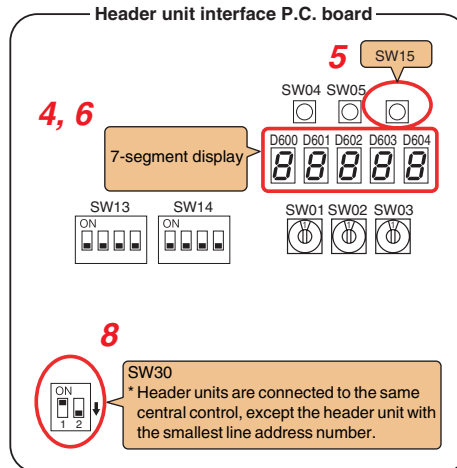
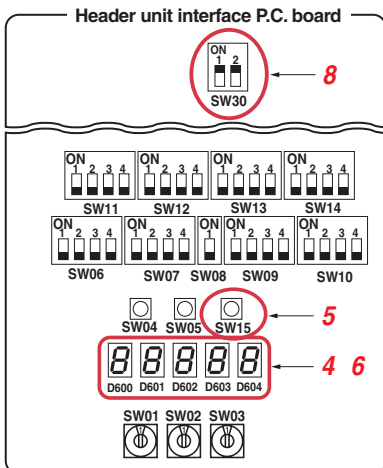
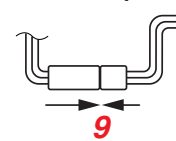
| Line address | SW13 | | | | SW14 | | | |
|--------------|------|---|---|---|------|---|---|---|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 15 | | | | × | × | ○ | ○ | ○ |
| 16 | | | | × | ○ | ○ | ○ | ○ |
| 17 | | | | ○ | × | × | × | × |
| 18 | | | | ○ | ○ | × | × | × |
| 19 | | | | ○ | × | ○ | × | × |
| 20 | | | | ○ | ○ | ○ | × | × |
| 21 | | | | ○ | × | × | ○ | × |
| 22 | | | | ○ | ○ | × | ○ | × |
| 23 | | | | ○ | × | ○ | ○ | × |
| 24 | | | | ○ | ○ | ○ | ○ | × |
| 25 | | | | ○ | × | × | × | ○ |
| 26 | | | | ○ | ○ | × | × | ○ |
| 27 | | | | ○ | × | ○ | × | ○ |
| 28 | | | | ○ | ○ | ○ | × | ○ |

□ : Is not used for setup of system address. (Do not change setup.)

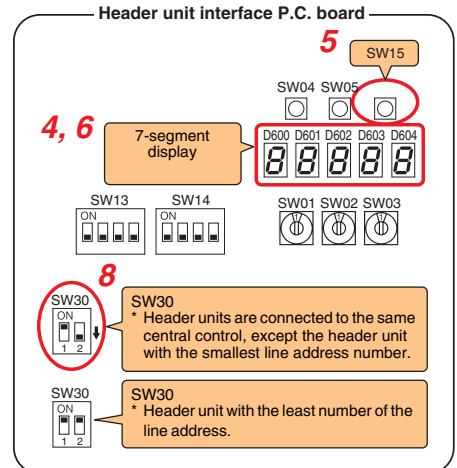
- Check that the relay connectors between [U1, U2] and [U3, U4] terminals are not connected in all the outdoor units to which the central control is connected.
(At shipment from factory: Connector not connected)
- Turn on power of indoor/outdoor. (In order of indoor → outdoor)
- After approx. 1 minute, check that 7-segment display is **U.1.L08 (U.1. flash)** on the interface P.C. board of the outdoor unit.
- Push SW15 to start the setup of automatic addressing.**
(Max. 10 minutes for 1 line (Usually, approx. 5 minutes))
- When the count **Auto 1 → Auto 2 → Auto 3** is displayed in 7-segment display section, and it changes **from U.1. - - - (U. 1. flash)** to **U. 1. - - - (U. 1. light)**, the setup finished.
- Procedure 4. to 6. are repeated in other refrigerant lines.
- When address setup has finished in all the system, turn off SW30-bit2 on the interface P.C. boards of the lines connected to the identical central control except a line with least line address number.
(Terminator resistors of the wires in the central control line of indoor/outdoor are unified.)
- Connect the relay connector between [U1U2] and [U3U4] terminals of the outdoor unit for each refrigerant line.
- Then set up the central control address.
(For the central control address setup, refer to the Installation manual of the central control devices.)



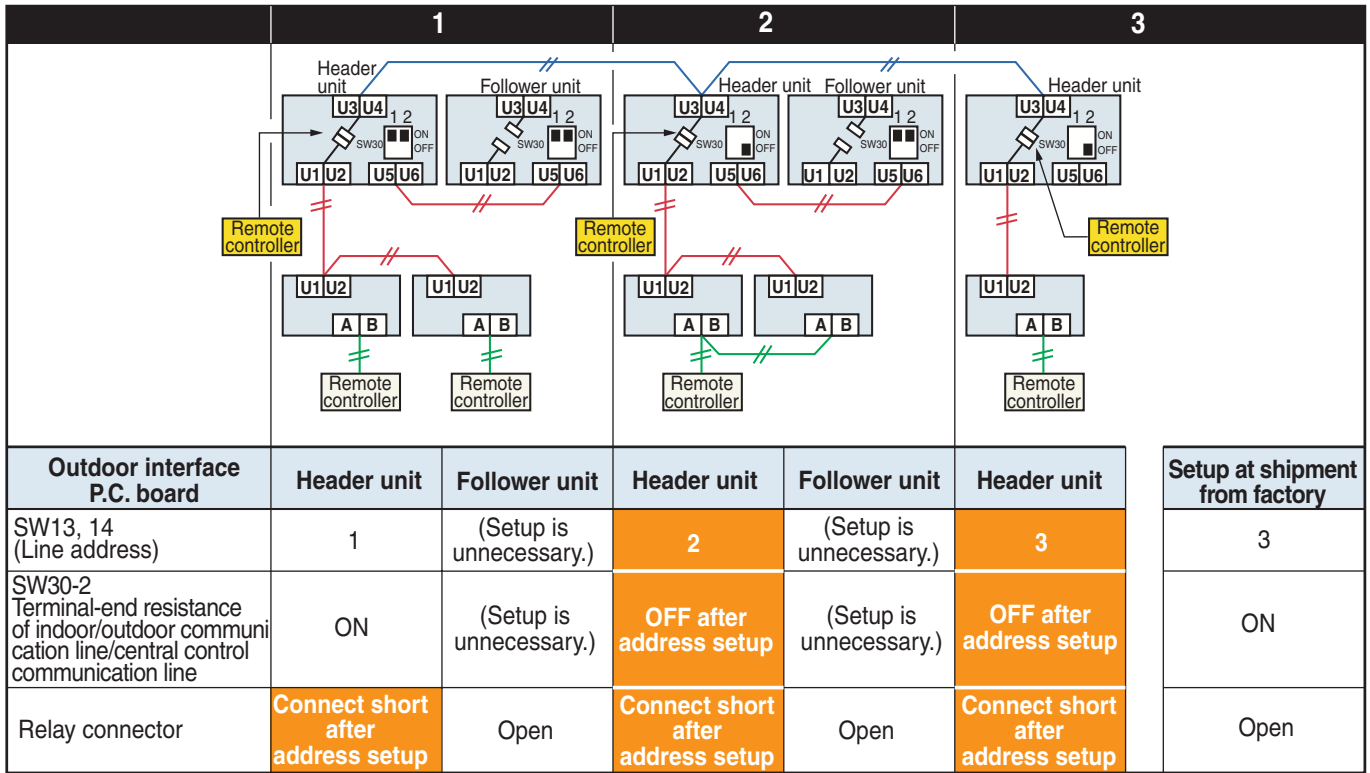
(Mini-SMMS)



(SMMS-i)



(SHRM-i)



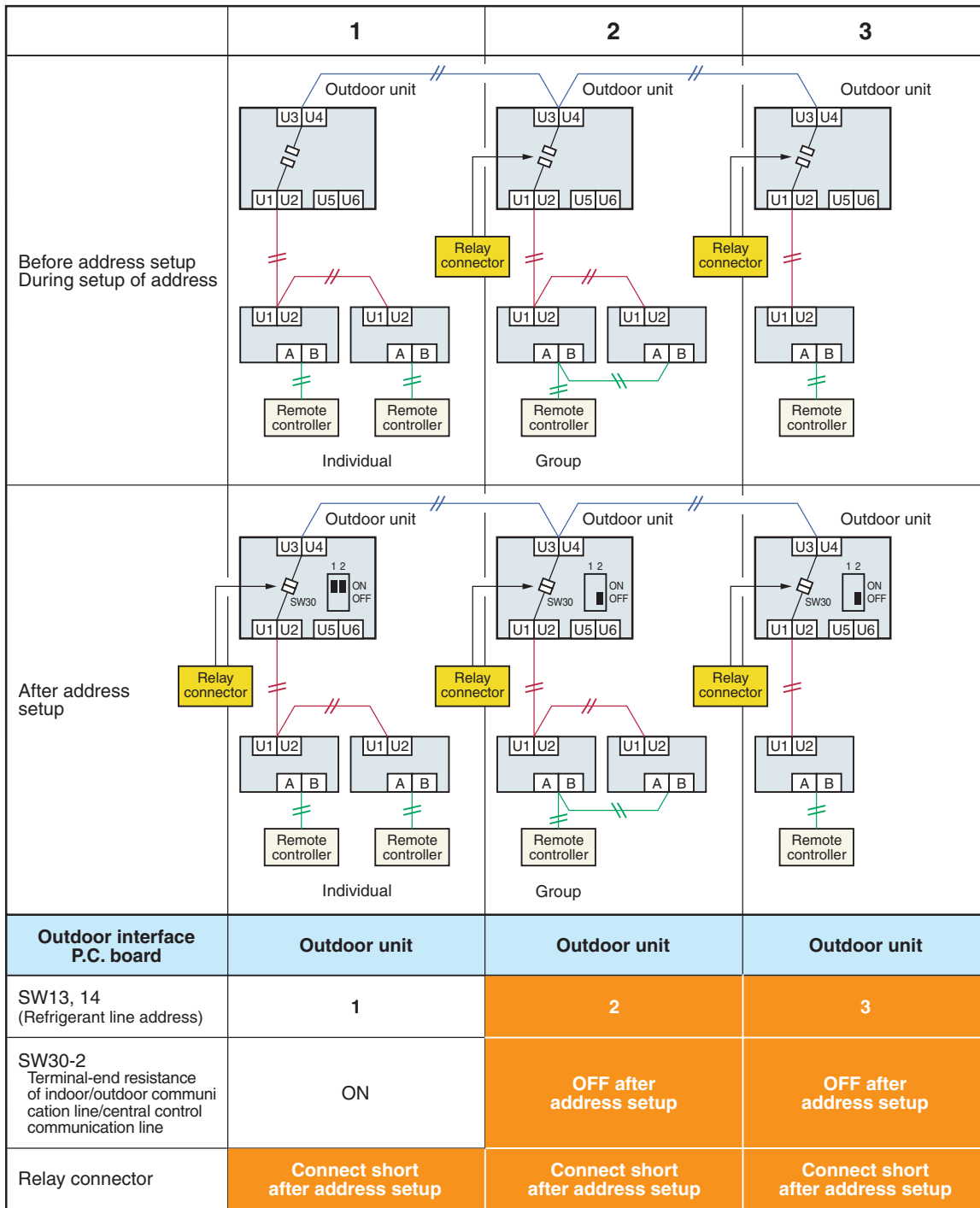
Indoor side (Automatic setup)

| | | | | | |
|---------------------|---|---|---|---|---|
| | 1 | 1 | 2 | 2 | 3 |
| Indoor unit address | 1 | 2 | 1 | 2 | 1 |
| Group address | 0 | 0 | 1 | 2 | 0 |

Point

Relay connector -NOTE-

Never connect a relay connector until address setup for all the refrigerant lines finishes; otherwise address cannot be correctly set up.

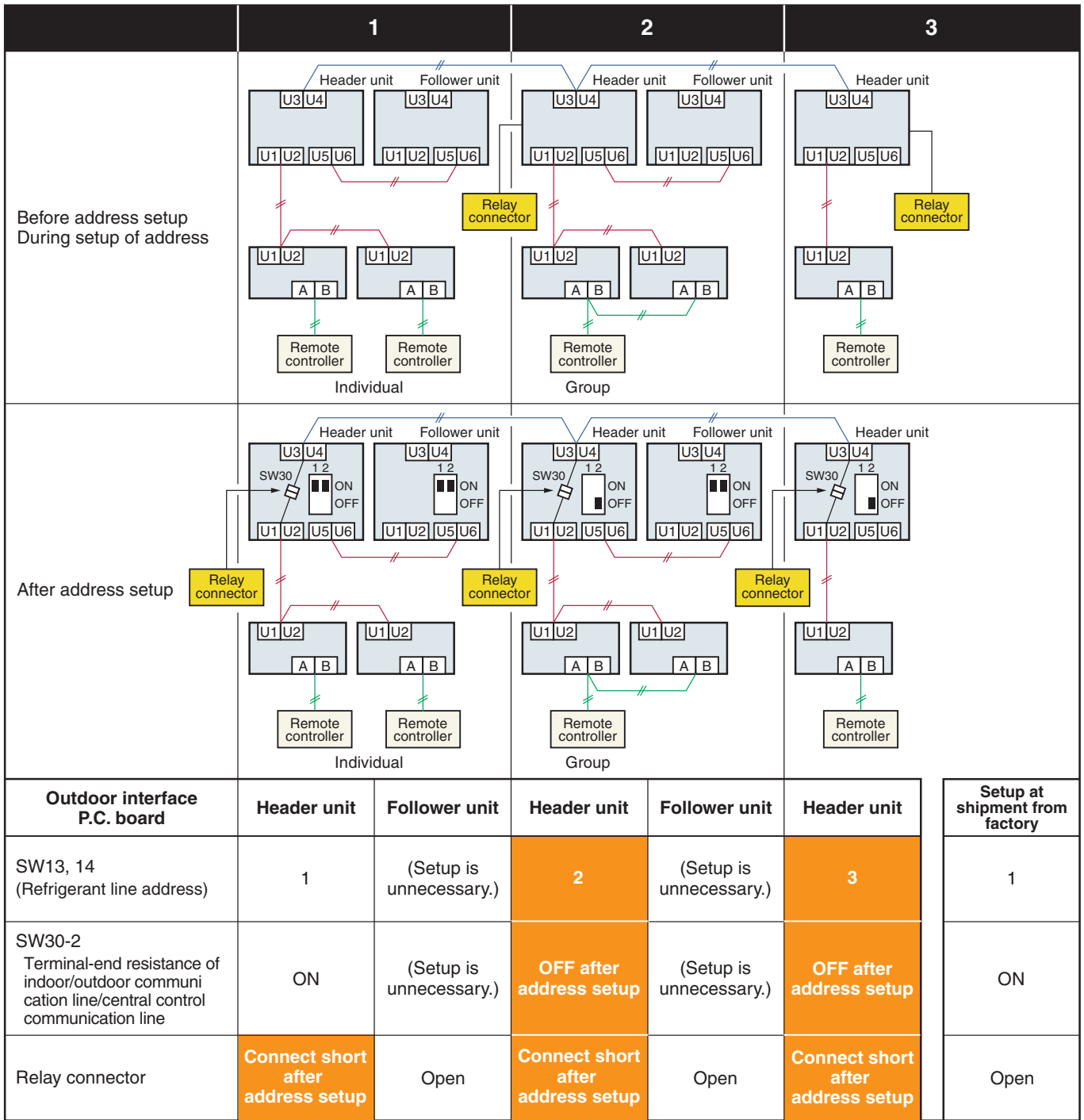


Indoor side (Automatic setup)

| | | | | | |
|--------------------------|---|---|---|---|---|
| Refrigerant line address | 1 | 1 | 2 | 2 | 3 |
| Indoor unit address | 1 | 2 | 1 | 2 | 1 |
| Group address | 0 | 0 | 1 | 2 | 0 |

NOTE

Never connect a relay connector until address setup for all the refrigerant lines has been completed ; otherwise address cannot be correctly set up.



Indoor side (Automatic setup)

| | | | | | |
|--------------------------|---|---|---|---|---|
| Refrigerant line address | 1 | 1 | 2 | 2 | 3 |
| Indoor unit address | 1 | 2 | 1 | 2 | 1 |
| Group address | 0 | 0 | 1 | 2 | 0 |

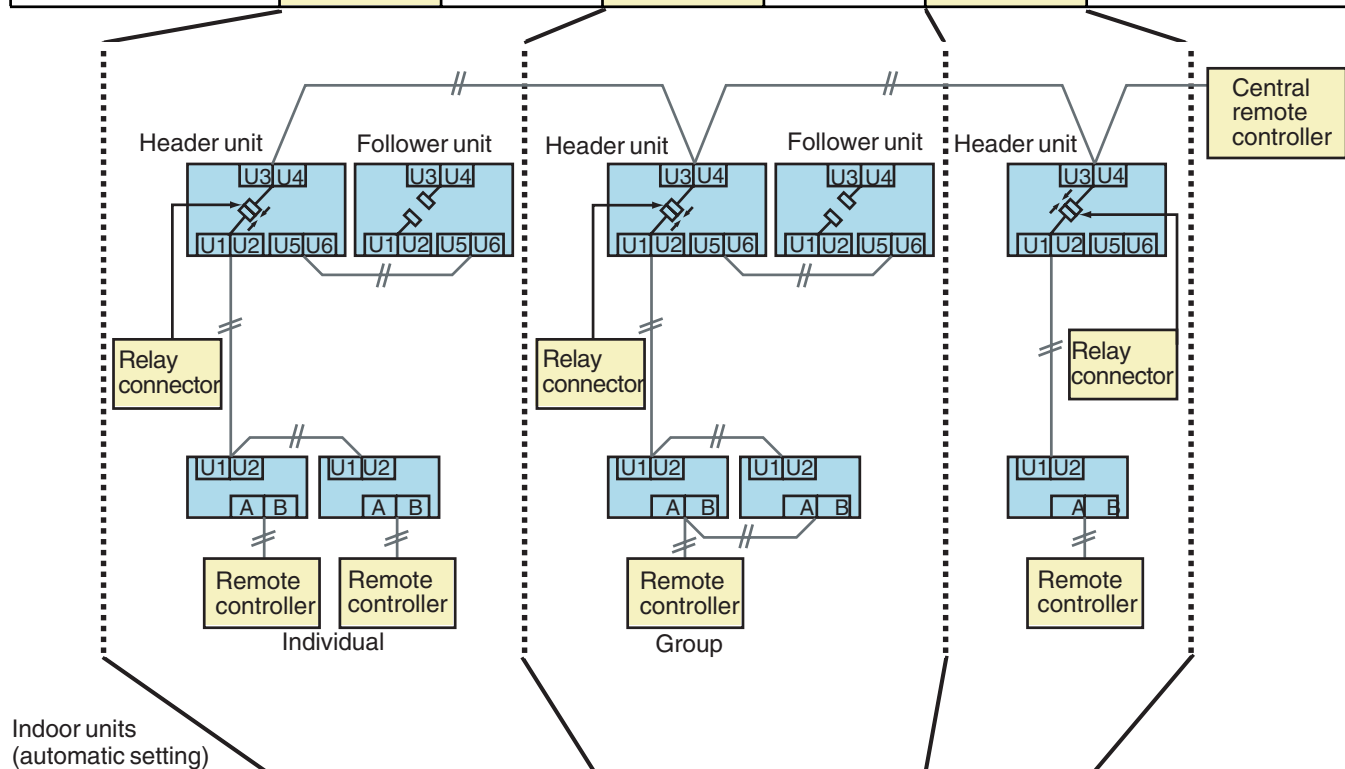
NOTE

Never connect a relay connector until address setup for all the refrigerant lines has been completed ; otherwise address cannot be correctly set up.

Switch setting (setting example when controlling 2 or more refrigerant lines centrally) Outdoor units (setting manually)

*The items in bold font must be set manually.

| Outdoor unit's interface P.C. board | Header unit | Follower unit | Header unit | Follower unit | Header unit | Factory default |
|--|--|-----------------------|---|-----------------------|---|-----------------|
| SW13, 14 (Line (system) address) | 1 | (No setting required) | 2 | (No setting required) | 3 | 1 |
| Dip switch 2 of SW30 (Terminator of indoor/ outdoor communication line and central control line) | ON | (No setting required) | Set to OFF after setting addresses. | (No setting required) | Set to OFF after setting addresses. | ON |
| Relay connector | Connect after setting addresses. | Open | Connect after setting addresses. | Open | Connect after setting addresses. | Open |



| Indoor units (automatic setting) | 1 | 1 | 2 | 2 | 3 |
|----------------------------------|---|---|---|---|---|
| Line (system) address | 1 | 1 | 2 | 2 | 3 |
| Indoor unit address | 1 | 2 | 1 | 2 | 1 |
| Group address | 0 | 0 | 1 | 2 | 0 |

CAUTION

Relay connector connection

Never connect relay connectors between the [U1, U2] and [U3, U4] terminals before completing address setting of all the refrigerant lines. Otherwise, the addresses cannot be set correctly.

Switch Setting of Remote Controller <SMMS, MiNi-SMMS, SHRM>

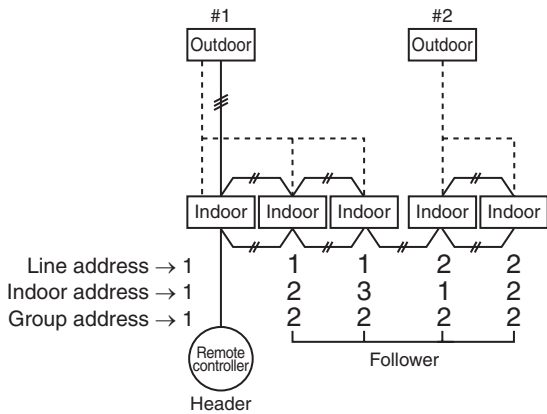
Manual address setup from remote controller

In case to decide an address of the indoor unit prior to finish of indoor wiring work and unpracticed outdoor wiring work
(Manual setup from remote controller)

Arrange one indoor unit and one remote controller set to 1 by 1.

Turn on the power.

Wiring example in 2 lines



In the above example, under condition of no inter-unit wire of the remote controller, set the address after individual connecting of the wired remote controller.

Group address

Individual : 0000
Header unit : 0001
Follower unit : 0002 } In case of group control

Operation procedure

- 1 → 2 → 3 → 4 → 5 → 6 →
- 7 → 8 → 9 → 10 → 11 → End

1 Push simultaneously **SET** + **CL** + **TEST** (**SET** + **CL** + **TEST**) buttons for 4 seconds or more.
LCD changes to flashing.

(Line address)

2 Using the setup temp. **▼** / **▲** (**▲** / **▼**) buttons, set 12 to the item code.

3 Using the timer time **▼** / **▲** (**▲** / **▼**) buttons, set up the line address.

(Match it with the line address on the interface P.C. board of the outdoor unit in the identical refrigerant line.)

4 Push **SET** (**SET**) button.
(OK when display goes on.)

(Indoor address)

5 Using the setup temp. **▼** / **▲** (**▲** / **▼**) buttons, set 13 to the item code.

6 Using the timer time **▼** / **▲** (**▲** / **▼**) buttons, set up the indoor address.

7 Push **SET** (**SET**) button.
(OK when display goes on.)

(Group address)

8 Using the setup temp. **▼** / **▲** (**▲** / **▼**) buttons, set 14 to the item code.

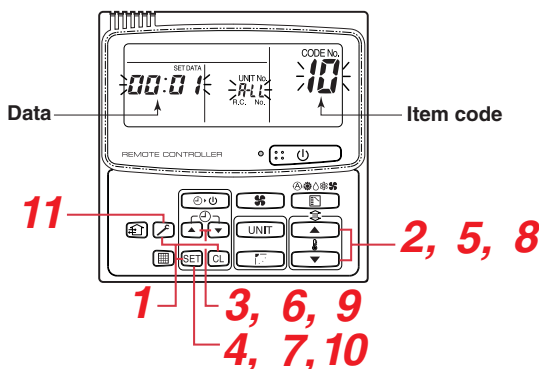
9 Using the timer time **▼** / **▲** (**▲** / **▼**) buttons, set Individual = **0000**, Header unit = **0001**, Follower unit = **0002**.

10 Push **SET** (**SET**) button.
(OK when display goes on.)

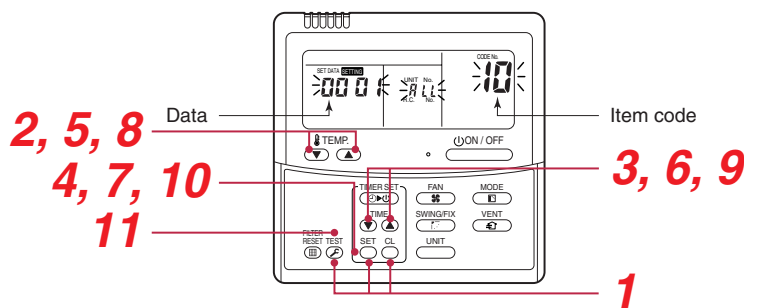
11 Push **TEST** (**TEST**) button.
Setup operation finished.
(Status returns to normal stop status.)

Note : () in button is RBC-AMT21E (SMMS Only)

RBC-AMT 21E (SMMS Only)



RBC-AMT31E



Note 1)

When setting the line address from the remote controller, do not use address 29 and 30. The address 29 and 30 cannot be set up in the outdoor unit. Therefore if they are incorrectly set up, a check code [E04] (Indoor/outdoor communication circuit error) is output.

Clearance of address (Return to status (Address undecided) at shipment from factory)

An address is individually cleared from a wired remote controller.
(SMMS, SHRM only)

| | | | | | |
|--|----|----------------|---------------|-----------------|----------|
| | | indoor address | group address | central address | |
| | 12 | 13 | 14 | 03 | → <0099> |

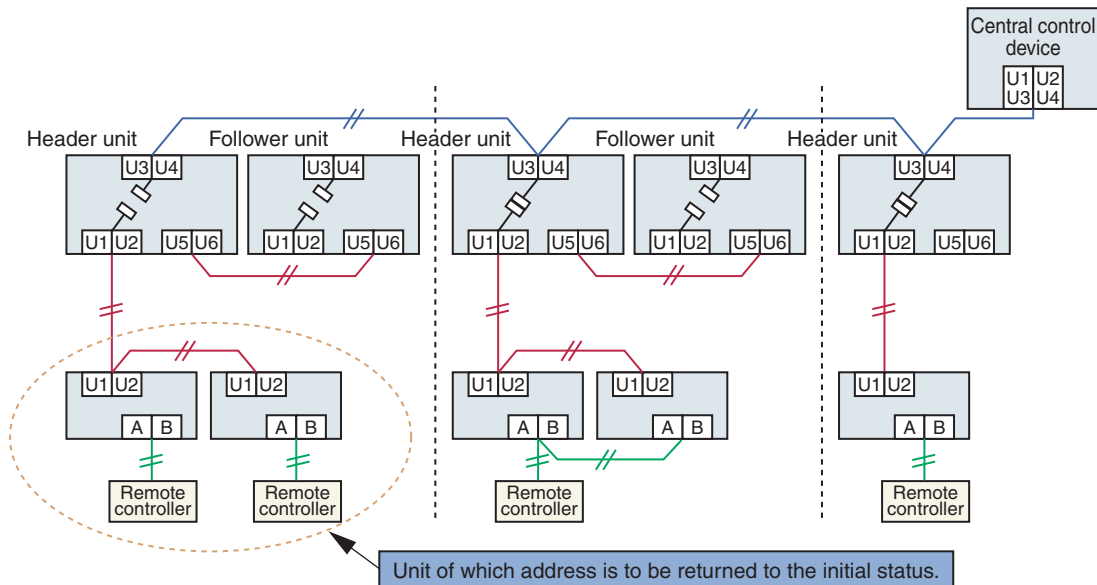
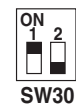
Method 1

An address is individually cleared from a wired remote controller.
"0099" is set up to line address, indoor address, and group address data from the remote controller.
(For the setup procedure, refer to the abovementioned address setup from the remote controller.)

Method 2

Clear the indoor addresses in the same refrigerant line from the outdoor unit.

1. Turn off the power of the refrigerant line to be returned to the status at shipment, and change the header unit to the following status.
 - 1) Remove the relay connector between [U1U2] and [U3U4].
(If it has been already removed, leave it as it is.)
 - 2) Turn on **SW30-bit2** on the interface P.C. board of the header unit if it is OFF.
(If it has been already ON, leave it as it is.)



2. Turn on the indoor/outdoor power of which address is to be cleared.
After approx. 1 minute, check that "U.1. ---" is displayed, and then execute the following operation on the interface P.C. board of the header unit of which address is to be cleared in the refrigerant line.

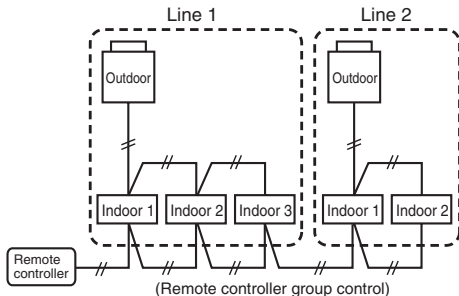
| SW01 | SW02 | SW03 | SW04 | Address which can be cleared |
|------|------|------|--|-------------------------------|
| 2 | 1 | 2 | After checking that A.d.buS is displayed on 7-degment display, and then push SW04 for 5 seconds or more. | Line + Indoor + Group address |
| 2 | 2 | 2 | After checking that A.d.nEt is displayed on 7-degment display, and then push SW04 for 5 seconds or more. | Central address |

3. After "A.d. c.L." has been displayed on 7-degment display, return **SW01/SW02/SW03** to 1/1/1.
4. When the address clearing has correctly finished, "U.1.L08" is displayed on 7-degment display after a while.
If "A.d. n.G." is displayed on 7-degment display, there is a possibility which is connected with the other refrigerant line.
Check again the relay connector between [U1U2] and [U3U4] terminals.
Note) Be careful that the other refrigerant line address may be also cleared if clearing operation is not correctly executed.
5. After clearing of the address, set up an address again.

Manual Address Setup from the Remote Controller

With indoor wiring work completed and outdoor wiring work not done. in cases where indoor unit addresses are decided in advance from the wired remote controller, or in cases where addresses are change after address setup.

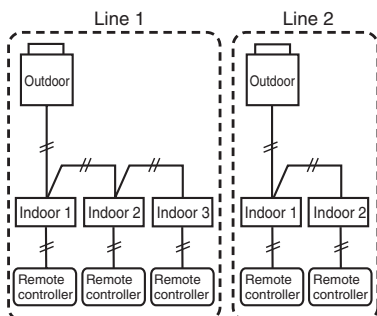
(Wiring example for 2 refrigerant lines)



| Line address | 1 | 1 | 1 | 2 | 2 |
|----------------|--------|----------|----------|----------|----------|
| Indoor address | 1 | 2 | 3 | 1 | 2 |
| Group address | 1 | 2 | 2 | 2 | 2 |
| | Header | Follower | Follower | Follower | Follower |

In the above example, where remote controllers are not yet wired, set the address manually after individually connecting the wired remote controller.

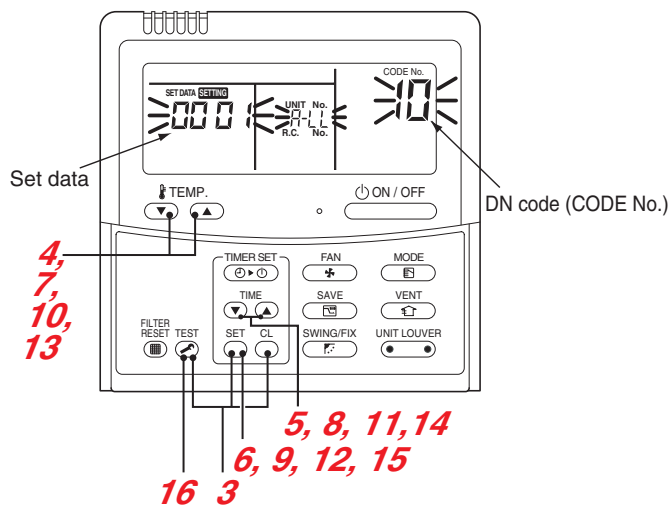
(Wiring during manual address setup)



After address setup, return to the original wiring over remote controllers.

Group address

Individual: 0000
 Header unit: 0001 } In cases of remote controller group control
 Follower unit: 0002



RBC-AMT32E

- 1 Arrange one indoor unit and one remote controller set to 1 by 1.
- 2 Turn on the power.
- 3 Push the **SET** + **CL** + **TEST** buttons simultaneously for 4 seconds or more.
LCD begins blinking.
- (Refrigerant line address)
- 4 Using the **TEMP** buttons, set the DN code to **12**.
- 5 Using the **TIME** buttons, set up the line address (match it with the line address on the interface PC board of the header unit on the same refrigerant line).
- 6 Push the **SET** button (OK when the display goes on).
- (Indoor address)
- 7 Using the **TEMP** buttons, set the DN code to **13**.
- 8 Using the **TIME** buttons, set up the indoor address.
(0001~0048)
- 9 Push the **SET** button (OK when the display goes on).
- (Group address)
- 10 Using the **TEMP** buttons, set the DN code to **14**.
- 11 Using the **TIME** buttons, set Individual = **0000**, Header unit = **0001**, Follower unit = **0002**.
- 12 Push the **SET** button (OK when the display goes on).
- (Central control address)
- 13 Using the **TEMP** buttons, set DN code to **03**.
- 14 Using the **TIME** buttons, set up the central control address. (0001~0054)
- 15 Push **SET** button. (OK when display goes on).
- 16 Push the **TEST** button.
Setup is finished ("Setting up" blinks; when "Setting up" goes off, operation is possible).
- 17 Return to the original wiring over remote controllers.

NOTE

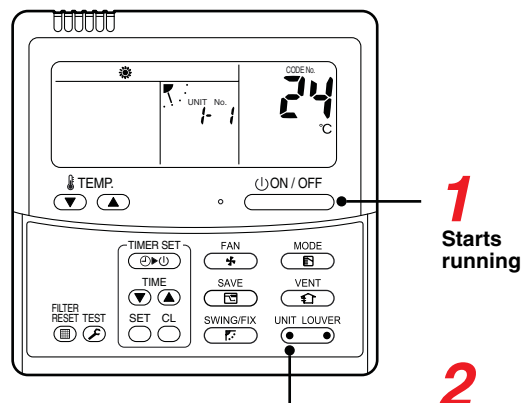
- (1) When setting the line address from the remote controller, do not use addresses 29 and 30. Addresses 29 and 30 cannot be set up on the outdoor unit. If they are incorrectly used, the code "E04" (indoor/outdoor communication circuit error) is output.
- (2) When manual address setup has been done from a remote controller, and central control over refrigerant lines is to be done, setup the header unit of each line as follows:
 - Using SW13 and SW14 on the interface PC board of the header unit of each line, setup the line address for each line.
 - Except for the line with the smallest line address number, set SW03-bit 2 to "off" for the interface PC board of the header unit of lines connected to the same central control (put the resistance of the end terminals of the central control line, indoors and outdoors, into one).
 - Connect the relay connector between U1/U2 and U3/U4 of the header unit for each refrigerant line.
 - After that, set up the central control address. (For central control address setup, refer to the installation manual of the central control devices.)

Confirming the indoor unit addresses and the position of an indoor unit using the remote controller

◆ Confirming the numbers and positions of indoor units

To see the indoor unit address of an indoor unit which you know the position of

- ▼ When the unit is individual (the indoor unit is paired with a wired remote controller one-to-one), or it is a group-controlled one.




(Execute it while the units are running.)

1 Push the  button if the units stop.

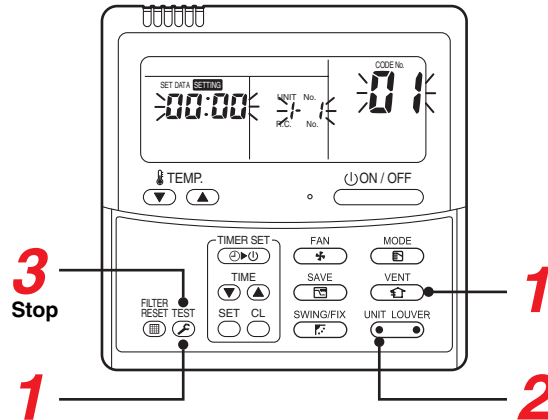
2 Push the  button (left side of the button).

A unit numbers **!-!** is indicated on the LCD (it will disappear after a few seconds). The indicated number shows the system address and indoor unit address of the unit.

When 2 or more indoor units are connected to the remote controller (group-controlled units), a number of other connected units appears each time you push the  button (left side of the button).





To find an indoor unit's position from its address

▼ When checking unit numbers controlled as a group

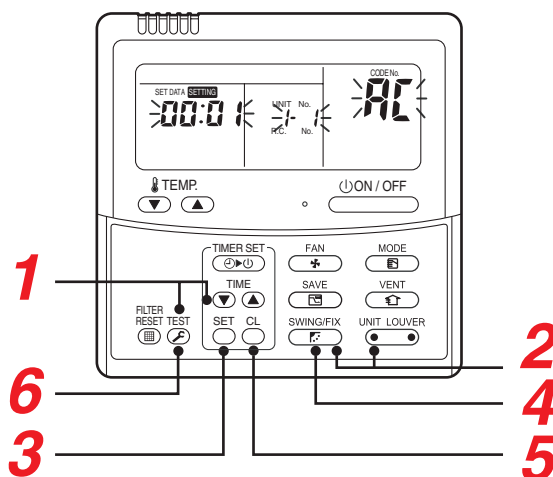


(Execute it while the units are stopped.)

The indoor unit numbers in a group are indicated one after another. The fan and louvers of the indicated units are activated.










- 1** Push and hold the  and  buttons at the same time for more than 4 seconds.
 - **ALL** appears on UNIT No. on the LCD display.
 - The fans and louvers of all the indoor units in the group are activated.
- 2** Push the  button (left side of the button). Each time you push the button, the indoor unit numbers are indicated one after another.
 - The first-indicated unit number is the address of the header unit.
 - Only the fan and louvers of the indicated indoor unit are activated.
- 3** Push the  button to finish the procedure.
 - All the indoor units in the group stop.

▼ To check all the indoor unit addresses using an arbitrary wired remote controller.
(When communication wirings of 2 or more refrigerant lines are interconnected for central control)



(Execute it while the units are stopped.)

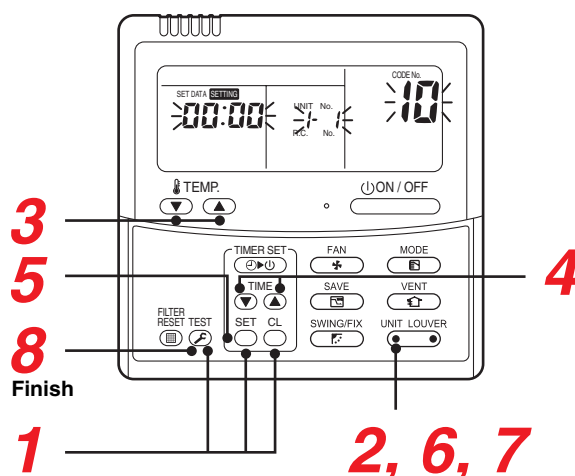
You can check indoor unit addresses and positions of the indoor units in a single refrigerant line. When an outdoor unit is selected, the indoor unit numbers of the refrigerant line of the selected unit are indicated one after another and the fan and louvers of the indicated indoor units are activated.

- 1** Push and hold the TIME  /  and  buttons at the same time for more than 4 seconds. At first, the line 1 and CODE No. **AC** (Address Change) are indicated on the LCD display. (Select an outdoor unit.)
- 2** Push  the (left side of the button) and  buttons repeatedly to select a system address.
- 3** Push the  button to confirm the system address selection.
 - The address of an indoor unit connected to the selected refrigerant line is indicated on the LCD display and its fan and louvers are activated.
- 4** Push the  button (left side of the button). Each time you push the button, the indoor unit numbers of the selected refrigerant line are indicated one after another.
 - Only the fan and louvers of the indicated indoor unit are activated.
- ◆ **To select another system address**
- 5** Push the  button to return to step 2.
 - After returning to step 2, select another system address and check the indoor unit addresses of the line.
- 6** Push  the button to finish the procedure.













Changing the indoor unit address using a remote controller

To change an indoor unit address using a wired remote controller.

- ▼ The method to change the address of an individual indoor unit (the indoor unit is paired with a wired remote controller one-to-one), or an indoor unit in a group. (The method is available when the addresses have already been set automatically.)



(Execute it while the units are stopped.)

- 1** Push and hold the , , and  buttons at the same time for more than 4 seconds. (If 2 or more indoor units are controlled in a group, the first indicated UNIT No. is that of the head unit.)
- 2** Push the  button (left side of the button) repeatedly to select an indoor unit number to change if 2 or more units are controlled in a group. (The fan and louvers of the selected indoor unit are activated.) (The fan of the selected indoor unit is turned on.)
- 3** Push the TEMP.  /  buttons repeatedly to select **13** for CODE No..
- 4** Push the TIME  /  buttons repeatedly to change the value indicated in the SET DATA section to that you want.
- 5** Push the  button.
- 6** Push the  button (left side of the button) repeatedly to select another indoor UNIT No. to change. Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.
- 7** Push the  button (left side of the button) to check the changed addresses.
- 8** If the addresses have been changed correctly, push the  button to finish the procedure.

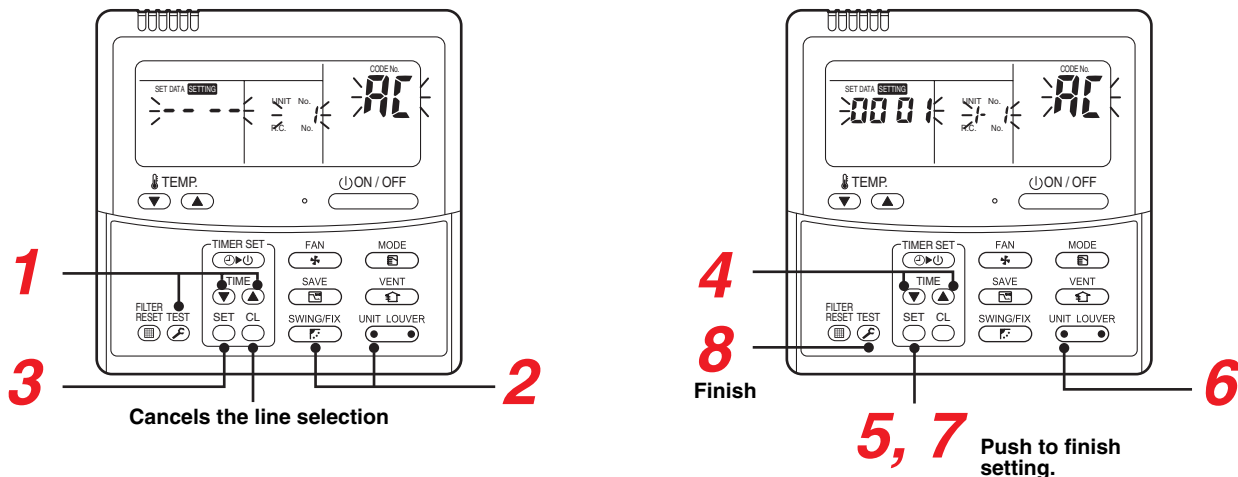
▼ To change all the indoor unit addresses using an arbitrary wired remote controller.
(The method is available when the addresses have already been set automatically.)

(When communication wirings of 2 or more refrigerant lines are interconnected for central control)

NOTE













You can change the addresses of indoor units in each refrigerant line using an arbitrary wired remote controller.

* Enter the address check/change mode and change the addresses.



If no number appears on UNIT No., no outdoor unit exists on the line. Push  button and select another line following step 2.

(Execute it while the units are stopped.)

- 1 Push and hold the TIME  /  and  buttons at the same time for more than 4 seconds.
At first, the line 1 and CODE No. **AC** (Address Change) are indicated on the LCD display.
- 2 Push  (left side of the button) and  buttons repeatedly to select a system address.
- 3 Push the  button.
 - The address of one of the indoor units connected to the selected refrigerant line is indicated on the LCD display and the fan and louvers of the unit are activated.
At first, the current indoor unit address is displayed in SET DATA.
(No system address is indicated.)
- 4 Push the TIME  /  buttons repeatedly to change the value of the indoor unit address in SET DATA.
Change the value in SET DATA to that of a new address.
- 5 Push the  button to confirm the new address on SET DATA.
- 6 Push the  button (left side of the button) repeatedly to select another address to change.
Each time you push the button, the indoor unit numbers in a refrigerant line are indicated one after another. Only the fan and louvers of the selected indoor unit are activated.
Repeat steps 4 to 6 to change the indoor unit addresses so as to make each of them unique.
- 7 Push the  button.
(All the segments on the LCD display light up.)
- 8 Push the  button to finish the procedure.

In the Case of an Increase in Address-undefined Indoor Units (Extension, etc.)

To set up the indoor address of a unit with an address that is undefined due to the extension of indoor units or replacement of PC board, etc., follow the methods below.

Method 1

Set up an address individually from a wired remote controller.

(Line address, Indoor address, Group address, Central address)

For the setup method, refer to "Manual address setup from the remote controller." above.

Method 2

Set up an address from the outdoor unit.

* Leave the addresses of the units for which addresses have already been set up as they are.

Set up an address only for the unit where the address is undefined.

Addresses are allocated from lower numbers.

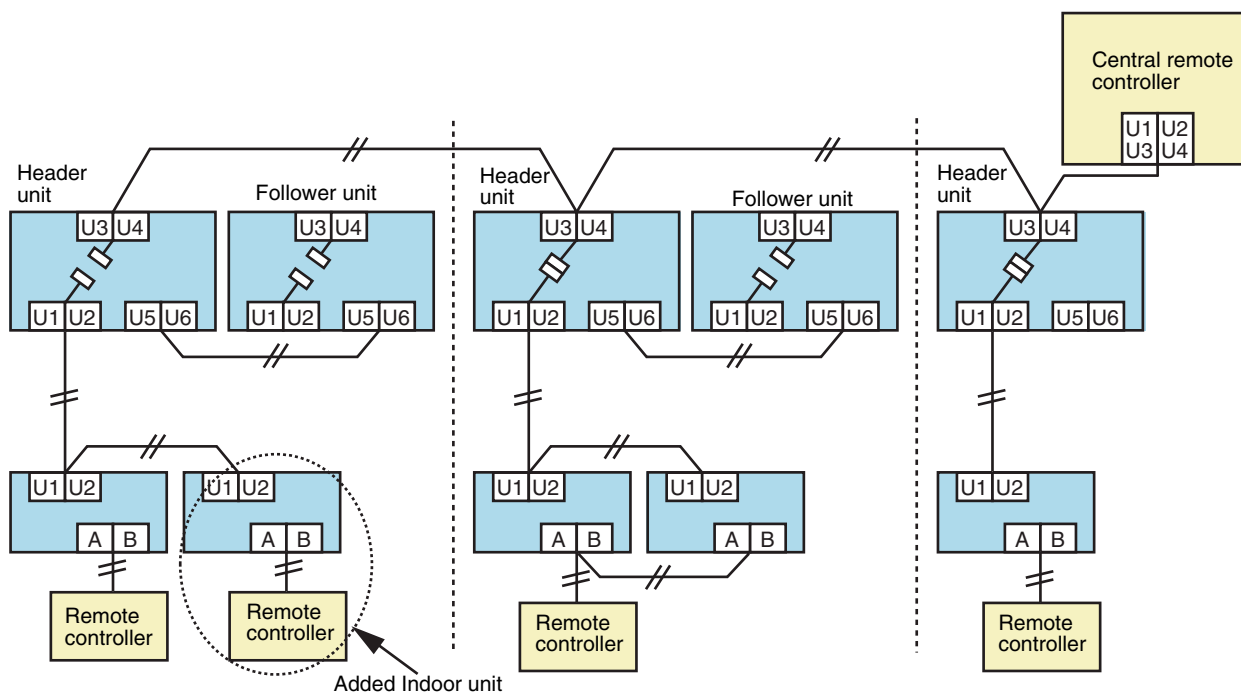
Setup procedure

Set up the outdoor header units in the refrigerant line to which indoor units have been added, as follows.

1. Remove the relay connector between U1/U2 and U3/U4.

2. If it is off, turn on SW30-bit 2 on the interface PC board at outdoor header unit side.

* Turn off the power, and then execute the operation.



3. Turn on the indoor/outdoor power for the refrigerant line for which an address is to be set up. After approximately 1 minute, check that "U.1. ---" is displayed on the 7-segment display.

4. Execute the following operation on the interface PC board of the header unit.

| | SW02 | SW03 | SW04 |
|---|------|------|---|
| 2 | 14 | 2 | After checking that In.At is displayed on the 7-segment display, push SW04 for 5 seconds or more. |

"AUTO1" → "AUTO2" → "AUTO3" → ... → "AUTO9" ... is counted and displayed on the 7-segment display.

5. When "U.1. ---" is displayed on the 7-segment display, the setup operation finished.

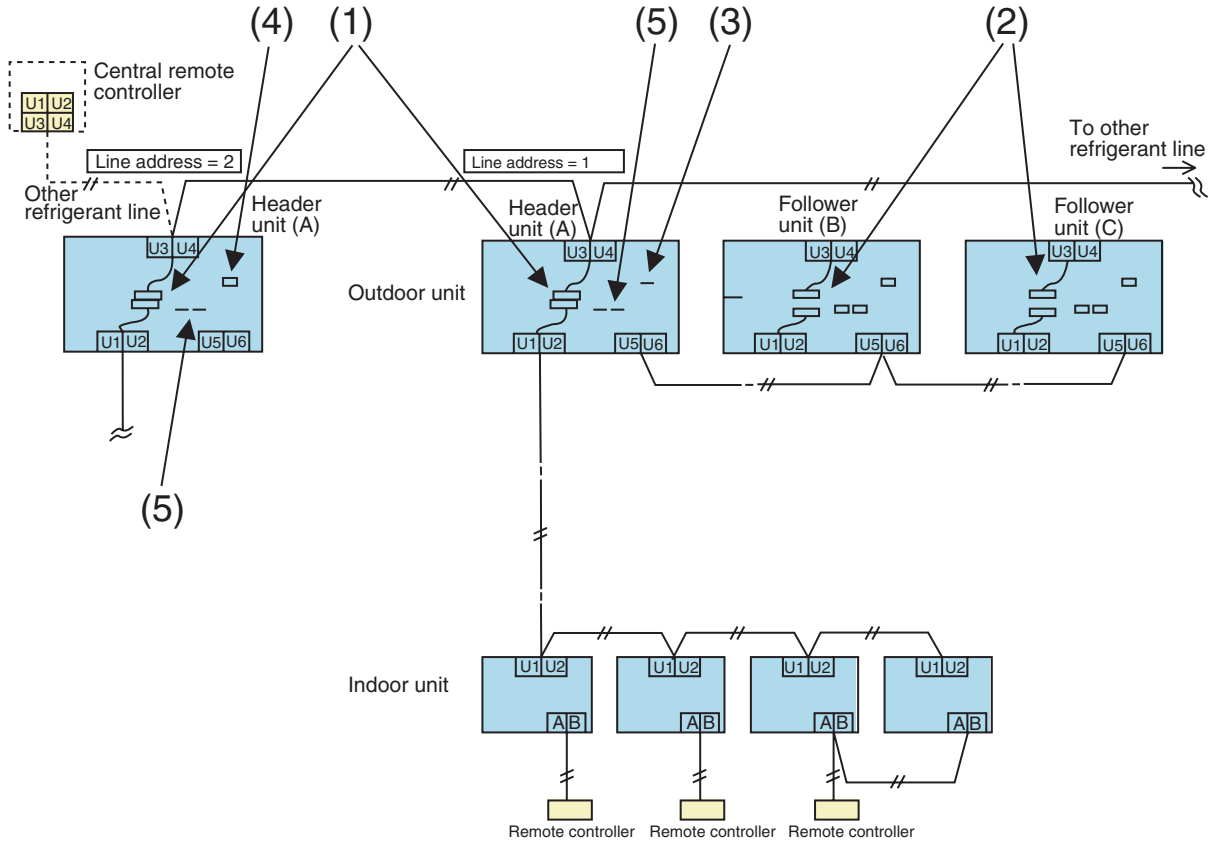
Turn off the indoor/outdoor power.

6. Return to the following setup as before.

- Relay connector
- SW30-bit 2
- SW01, SW02, SW03

Check after Address Setup when Central Control System Is Connected

When the central control system is connected, check that the following setup has finished after address setup.



| | Main check items | Check |
|---------------------|---|-------|
| Relay connector | (1) Is the relay connector of the header unit connected after address setup? | |
| | (2) Is the relay connector of the follower unit removed? | |
| Terminal resistance | (3) Is the end resistance (SW30-bit 2) of the header unit with the smallest line address number in the central control turned on? (Setup is unnecessary for follower units.) | |
| | (4) Is the terminal resistance (SW30-bit 2) of the header units, except for the line with the smallest central control line address, turned off? (Setup is unnecessary for follower units.) | |
| Line address | (5) Are addresses in the line address (SW13, SW14) not duplicated in each refrigerant line? | |

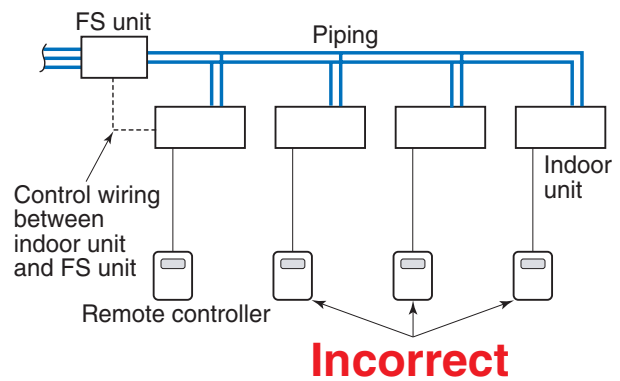
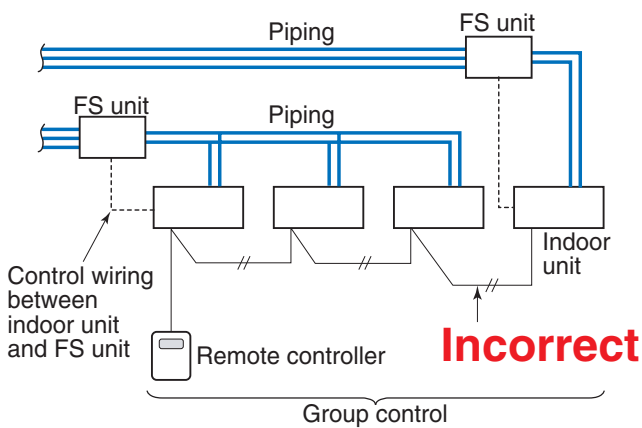
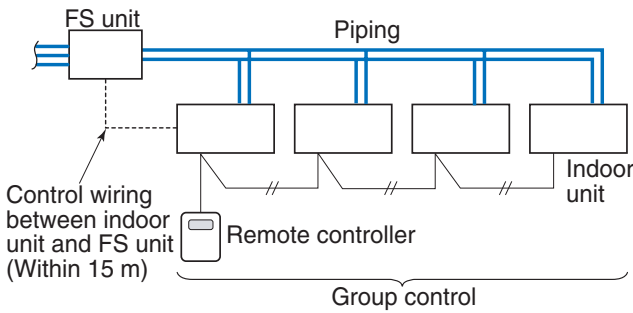
NOTE

The figure above does not show all the electric wires.
For details, refer to the installation manuals for the outdoor unit, indoor unit, remote controller, or optional devices.

Setting when connecting multiple indoor units to a FS (Flow Selector) unit

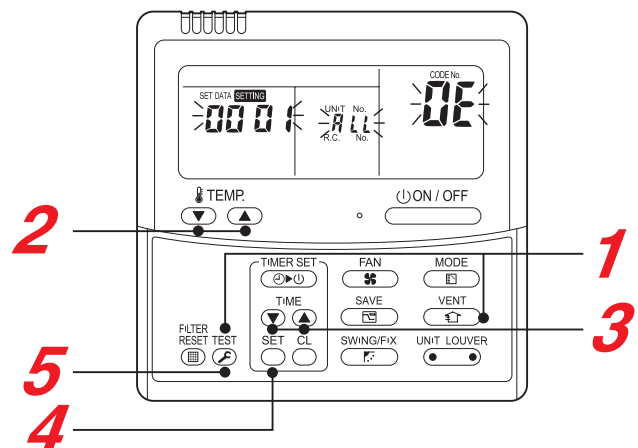
◆ Cautions to connection of indoor unit

- When connecting the multiple indoor units to a single FS unit, it is necessary to set up the CODE No.. Be sure to set up the CODE No. after setup of address.
- When connecting the multiple indoor units to a single FS unit, only group control is available. For the indoor unit, a remote controller cannot be individually connected.
- FS unit must be connected to one of the multiple indoor units which is under group control of a remote controller. The distance between FS unit and the indoor unit must be within 15 m.



◆ How to set up CODE No.

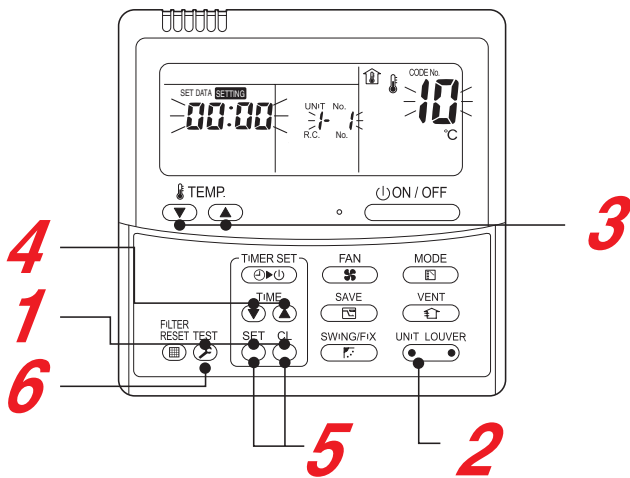
- 1 Push **VENT** + **TEST** buttons simultaneously for 4 seconds or more.
 - **ALL** is displayed in the UNIT No. window.
 - In this time, the fans of all the indoor units in the group control start the fan operation.
- 2 Using the set temperature buttons **▼** / **▲**, select the CODE No. "**0E**".
- 3 Change SET DATA to "**01**" by the timer buttons **▼** / **▲**.
- 4 Push **SET** button.
- 5 Push **TEST** button. Then the setup finished.



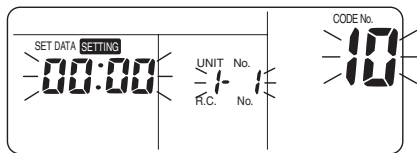
How to set up the cooling only indoor unit

When setting the specific indoor unit to Cooling Only unit without connecting to the flow selector unit, setup to the indoor unit to become the Cooling Only unit is necessary. Perform setup in the following procedure.

Setup to the indoor unit is performed by handling the wired remote controller. Even if a wired remote controller is not used, attach a wired remote controller for setup. Change the setup with the wired remote controller before using the air conditioner with a wireless remote controller. Change the setup during stop of the operation. (Be sure to stop operation of the air conditioner.)



- 1 When pushing **SET** + **CL** + **TEST** buttons simultaneously for 4 seconds or more, after a while, the display part flashes as shown in the figure.
 - Check that the displayed CODE No. is [10].
 - If the CODE No. indicates one other than [10], push **TEST** button to erase the display, and then retry the operation from the first step. (After pushing **TEST** button, the operation of remote controller cannot be accepted after a while.)

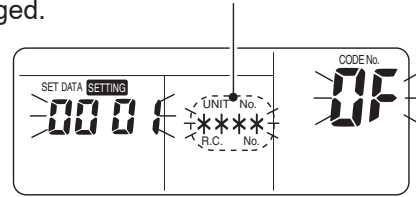


(* The display changes according to the indoor unit model.)

- 2 In a group control, the firstly displayed indoor unit No. becomes the header unit.

Every pushing **UNIT LOUVER** button (left side of the button), the indoor unit No. in the group control is displayed successively.

Select an indoor unit of which setting is to be changed.



In this time, the position of the indoor unit of which setup is to be changed can be confirmed because the fan and louver of the selected indoor unit work.

- 3 Use **DOWN** or **UP** buttons of the set temperature to specify the CODE No. [0F].
- 4 Use **DOWN** or **UP** buttons of the timer time to select the setup data [000 1].

| SET DATA | 0000 | 0001 |
|--------------------|-----------|--------------|
| Cooling Only setup | Heat pump | Cooling Only |

- 5 Push **SET** button. In this time, if the display changes from flashing to lighting, the setup completes.
 - To change the setup of an indoor unit other than the selected one, start operation from Procedure 2.
 - In a group control, setup change of all the indoor units in a group is necessary. To change the setup of the set other than the selected one, start again operation from Procedure 2.

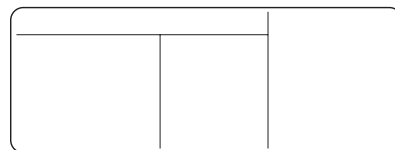
CAUTION

Cooling Only and Heat pump cannot exist in the same group.

- Pushing **CL** button clears the set up contents which have been already set. In this case, retry from Procedure 2.

- 6 When the setup finished, push **TEST** button. (The setup is determined.)

Pushing **TEST** button deletes the display and returns to normal stop status. (For some time after **TEST** button has been pushed, the operation of the remote controller cannot be accepted.)



Single cooling/Single heating Test Operation Check


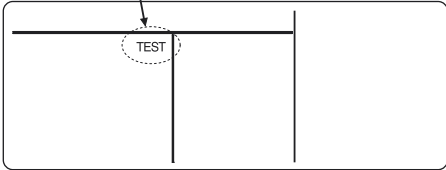

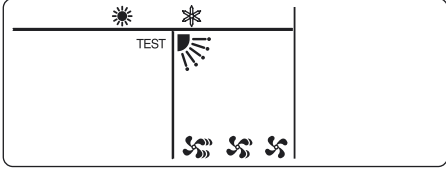



The Single cooling/Single heating test operation check can be performed on both the indoor remote controller and the outdoor header unit interface PC board.

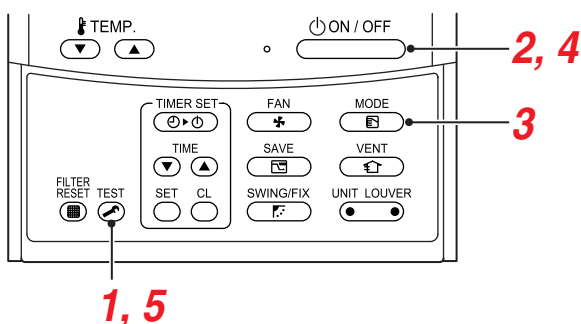
(1) Test operation start/stop operation

Test operation from the indoor remote controller

- Wired remote controller: Refer to the items below in “Test operation” of the wired remote controller.
- Wireless remote controller: Refer to the items below in “Test operation” of the wireless remote controller.
- Lite-Vision plus remote controller : Refer to the installation manual of RBC-AMS51E

▼ Wired remote controller

| Procedure | Operation content |
|-----------|---|
| 1 | When the  button is pushed for 4 seconds or more, “TEST” is displayed in the display section, and the unit enters test operating mode.  |
| 2 | Push the  button. |
| 3 | Using the Select Mode button, select the “* COOL” or “* HEAT” operating mode. <ul style="list-style-type: none"> • Do not use an operating mode other than “* COOL” or “* HEAT”. • Temperature adjustment is unavailable during test operation. • Error is detected as usual.  |
| 4 | When the test operation has finished, push the  button to stop the operation. (The same display as in procedure 1 appears in the display section.) |
| 5 | Push the  button to clear the test operating mode. (“TEST” disappears from the display section, and the status returns to the normal stopped status.)  |



▼ Wireless remote controller (Except the 4-way Cassette type and the Ceiling type)

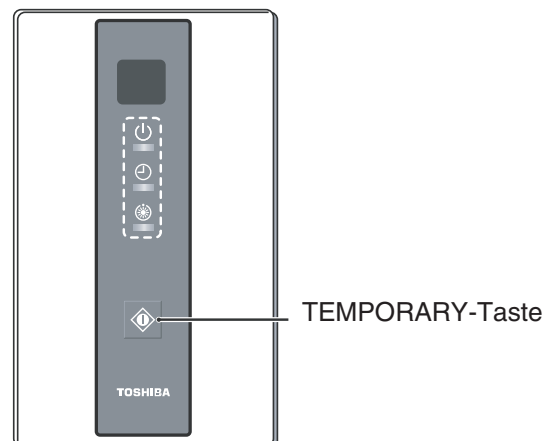
Test run (Forced cooling operation)

Requirement:

- Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

How to perform forced cooling operation

1. When TEMPORARY button is pushed for 10 seconds or more, “Pi!” sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcibly. Check cool air starts blowing. If the operation does not start, check wiring again.
2. To stop a test operation, push TEMPORARY button once again (Approx. 1 second).
 - Check wiring / piping of the indoor and outdoor units in forced cooling operation.



▼ Wireless remote controller (4-way Cassette type)

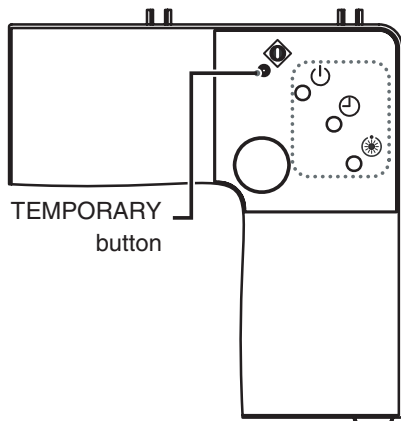
Test run (Forced cooling operation)

Requirement:

- Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

How to perform forced cooling operation

1. When TEMPORARY button is pushed for 10 seconds or more, "Pi!" sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly. Check cool air starts blowing. If the operation does not start, check wiring again.
2. To stop a test operation, push TEMPORARY button once again (Approx. 1 second).
 - Check wiring / piping of the indoor and outdoor units in forced cooling operation.



(For Receiver Unit)

Test operation from the outdoor unit

Note) The test operation returns to normal operating mode after 60 minutes.

▼ Wireless remote controller (Ceiling type)

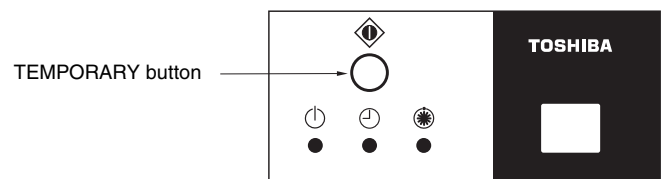
Test run (Forced cooling operation)

Requirement:

- Finish the forced cooling operation in a short time because it applies excessive strength to the air conditioner.

How to perform forced cooling operation

1. When TEMPORARY button is pushed for 10 seconds or more, "Pi!" sound is heard and the operation changes to a forced cooling operation. After approx. 3 minutes, a cooling operation starts forcedly. Check cool air starts blowing. If the operation does not start, check wiring again.
2. To stop a test operation, push TEMPORARY button once again (Approx. 1 second).
 - Check wiring / piping of the indoor and outdoor units in forced cooling operation.



(For Receiver Unit)

Resetting the address (Resetting to the factory default (address undecided))

Method 1

Clearing each address separately using a wired remote controller.

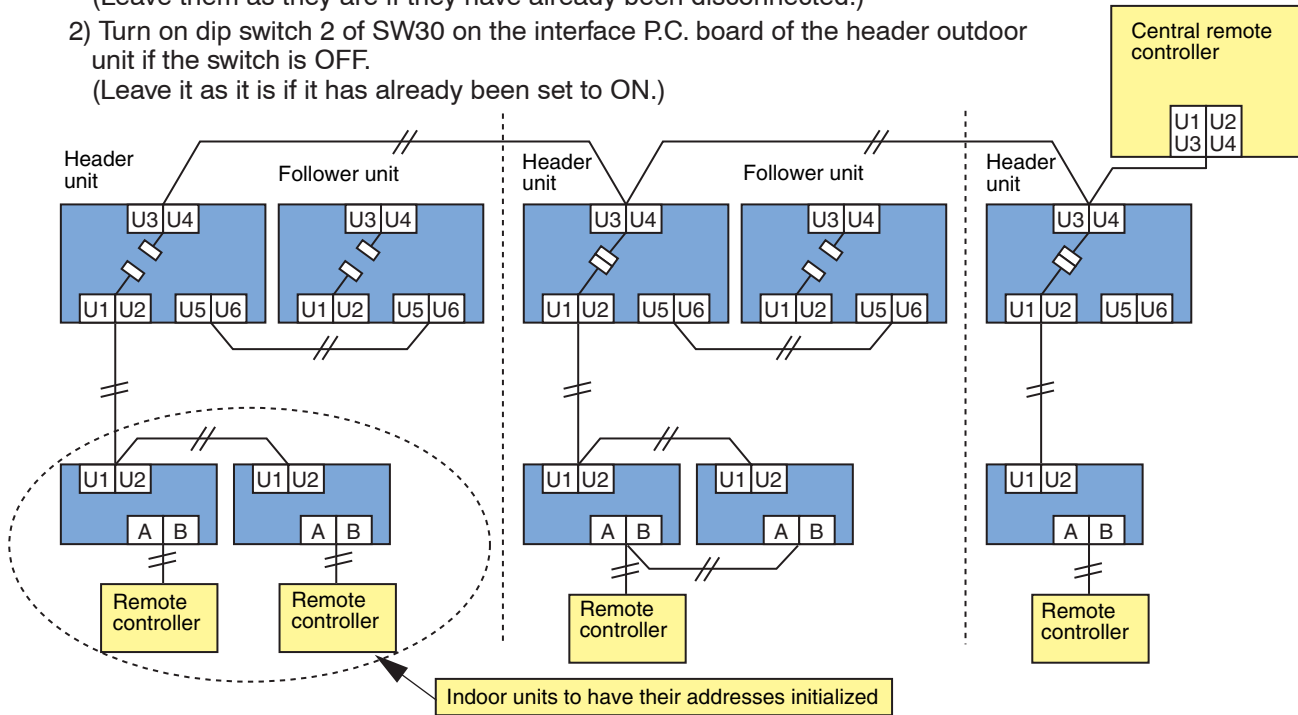
Set the system address, indoor unit address and group address to “0099” using a wired remote controller. (For the setting procedure, refer to the address setting procedures using the wired remote controller on the previous pages.)

Method 2

Clearing all the indoor unit addresses on a refrigerate line at once from the outdoor unit.

1 Turn off the refrigerant line to reset to the factory default and set the header outdoor unit of the line as below.

- 1) Disconnect the relay connectors between the [U1, U2] and [U3, U4] terminals. (Leave them as they are if they have already been disconnected.)
- 2) Turn on dip switch 2 of SW30 on the interface P.C. board of the header outdoor unit if the switch is OFF. (Leave it as it is if it has already been set to ON.)



2 Turn on the indoor and outdoor units of the refrigerant line for which you want to initialize the addresses. About one minute after turning on the power, confirm that the 7-segment display on the header outdoor unit indicates “U.1. - - -” and operate the interface P.C. board on the header outdoor unit of the refrigerant line as follows.

| SW01 | SW02 | SW03 | SW04 | Clearable addresses |
|------|------|------|---|----------------------------------|
| 2 | 1 | 2 | Confirm that the 7-segment display indicates “A.d.buS” and turn SW04 ON for more than five seconds. | System/indoor unit/group address |
| 2 | 2 | 2 | Confirm that the 7-segment display indicates “A.d.nEt” and turn SW04 ON for more than five seconds. | Central control address |

3 Confirm that the 7-segment display indicates “A.d. c.L.” and set SW01, SW02 and SW03 to 1, 1, 1 respectively.

4 After a time “U.1.L08” appears on the 7-segment display if the address clearing has been completed successfully.

If the 7-segment display indicates “A.d. n.G.”, the outdoor unit may still be connected with other refrigerant lines. Check the connection of the relay connectors between [U1, U2] and [U3, U4].

NOTE

Take care to carry out the procedure above correctly; otherwise, addresses in other refrigerate lines may also be cleared.

5 Set the addresses again after finishing the clearance.

In the case of an increase in address-undefined indoor units (extension, etc.)

To set up the indoor address of a unit with an address that is undefined due to the extension of indoor units or replacement of PC board, etc., follow the methods below.

Method 1

Set up an address individually from a wired remote controller.

(Line address, Indoor address, Group address, Central address)

For the setup method, refer to “Manual address setup from the remote controller.” above.

Method 2

Set up an address from the outdoor unit.

* Leave the addresses of the units for which addresses have already been set up as they are. Set up an address only for the unit where the address is undefined.

Addresses are allocated from lower numbers.

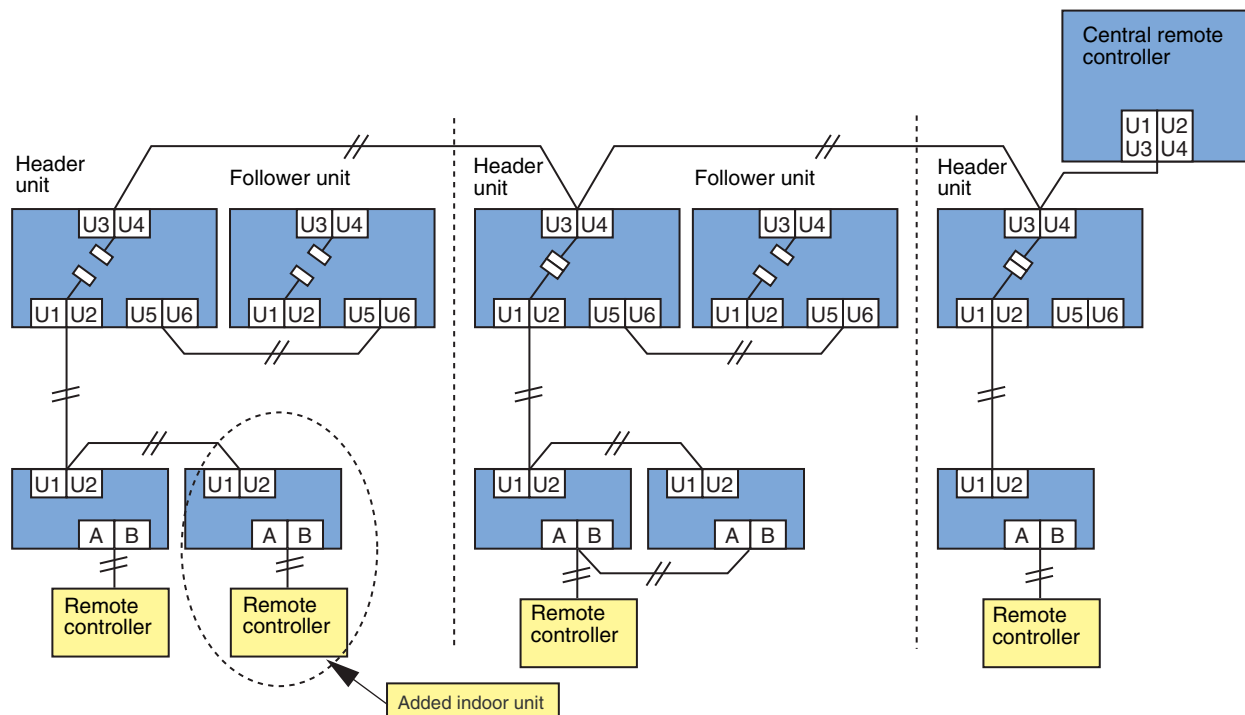
Setup procedure

Set up the outdoor header units in the refrigerant line to which indoor units have been added, as follows.

1 Remove the relay connector between U1/U2 and U3/U4.

2 If it is off, turn on SW30-bit 2 on the interface PC board at outdoor header unit side.

* Turn off the power, and then execute the operation.



3 Turn on the indoor/outdoor power for the refrigerant line for which an address is to be set up. After approximately 1 minute, check that “U.1. - - -” is displayed on the 7-segment display.

4 Execute the following operation on the interface PC board of the header unit.

| SW01 | SW02 | SW03 | SW04 |
|------|------|------|---|
| 2 | 14 | 2 | After checking that “In.At” is displayed on the 7-segment display, push SW04 for 5 seconds or more. |

“AUTO1” → “AUTO2” → “AUTO3” → ... → “AUTO9” ... is counted and displayed on the 7-segment display.

5 When “U.1. - - -” is displayed on the 7-segment display, the setup operation finished.

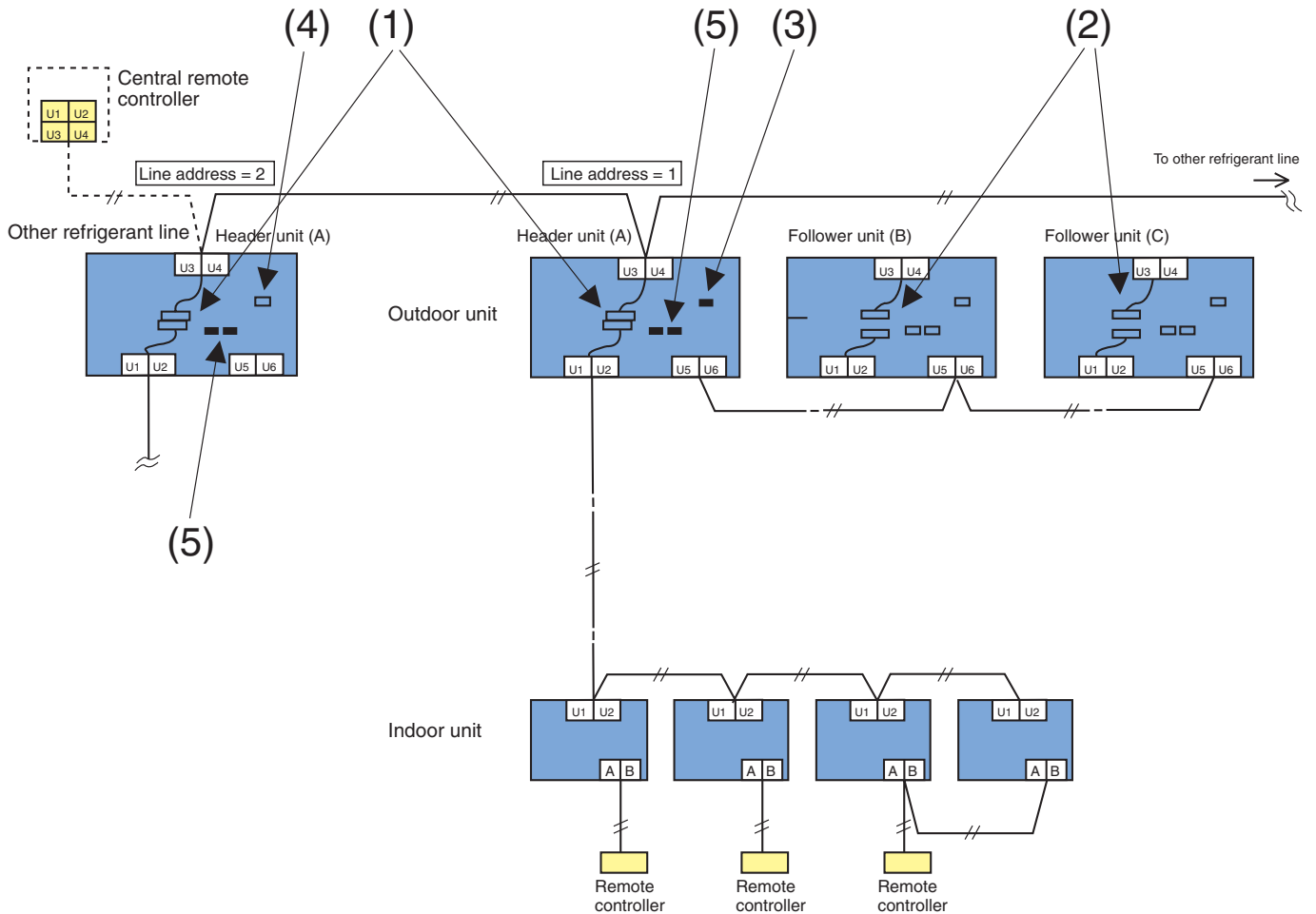
Turn off the indoor/outdoor power.

6 Return to the following setup as before.

- Relay connector
- SW30-bit 2
- SW01, SW02, SW03

Check after Address Setup when Central Control System Is Connected

When the central control system is connected, check that the following setup has finished after address setup.



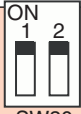

| | Main check items | Check |
|---------------------|---|-------|
| Relay connector | (1) Is the relay connector of the header unit connected after address setup? | |
| | (2) Is the relay connector of the follower unit removed? | |
| Terminal resistance | (3) Is the end resistance (SW30-bit 2) of the header unit with the smallest line address number in the central control turned on? (Setup is unnecessary for follower units.) | |
| | (4) Is the terminal resistance (SW30-bit 2) of the header units, except for the line with the smallest central control line address, turned off? (Setup is unnecessary for follower units.) | |
| Line address | (5) Are addresses in the line address (SW13, SW14) not duplicated in each refrigerant line? | |

NOTE

The figure above does not show all the electric wires.
For details, refer to the installation manuals for the outdoor unit, indoor unit, remote controller, or optional devices.

If the phenomena appear, such as a check code is output or the remote controller is not accepted in power-ON after cabling work or in address setup operation, the following causes are considered.

1 A check Code is Displayed on the Remote Controller

| Check code displayed on remote controller | Center unit 7-segment display | Cause | Countermeasures |
|---|-------------------------------|--|--|
| E04 | E19-00 | Outdoor power is formerly turned on. | Turn on the power again. (In order of Indoor Outdoor) |
| | | There is none of outdoor terminal resistance, or there are two or more resistances. (After address setup) | Check SW30-bit 2 of the header unit. No connection between multiple refrigerant lines:SW30-bit 2 ON Connection between multiple refrigerant lines:SW30-bit 2 of the connected header unit is turned on only in one line. |
| | | After address was decided, all the indoor units do not correctly response after power-ON in outdoor unit.  | Check and modifies disconnection of indoor/outdoor communication line. (Communication line between center unit and the leading indoor unit) Check influence of communication noise. |
| | L08 | Address setup error <ul style="list-style-type: none"> Only line addresses of the connected indoor units are undefined. The outdoor line address and the line addresses in all indoor units do not match. The indoor addresses are duplicated. (Units except those displaying E04 are duplicated.) A header unit is not set up in a group. (Except group displaying E04) | Set up address again. |
| | E08-XX | Duplication of indoor addresses. (Address No in which sub-code of the check code are duplicated) | Set up address again. |
| | E07 | There is none of outdoor terminal resistance, or there are two or more resistances. (After address setup, when terminal resistance setup is changed after power-ON.)  | Check SW30-bit 2 of the header unit. No connection between multiple refrigerant lines:SW30-bit 2 ON Connection between multiple refrigerant lines:SW30-bit 2 of the connected header unit is turned on only in one line. |
| | | Transmission circuit error at interface side (P.C. board failure) | Replace the interface P.C. board. |
| E06 | E06 | After address setup, communication from all the indoor units interrupted under condition that a normal operation can be performed. | Check and correct disconnection of indoor/outdoor communication line. (Communication line between header unit and the leading indoor unit) Check influence of communication noise. |
| E16 | E16-XX | Exceeded No of connected indoor units or exceeded capacity. | Adjust No of connected indoor units or capacity. |
| E25 | E25 | Duplication of outdoor addresses. (Only when outdoor address was manually set up) | Do not use a manual setup for outdoor address. |
| E26 (SMMS Only) | E26-XX | No. of connected outdoor units decreased. <ul style="list-style-type: none"> When setting outdoor backup The power of follower unit is not turned on. | Correct of cause of error occurrence <ul style="list-style-type: none"> If it occurred when setting backup, clear the error after setup finish. If the power of follower unit is not turned on, turn on the power. |
| L04 | L04 | Duplication of outdoor line addresses <ul style="list-style-type: none"> Line address setup error, occurred after connection between U1, U2 and U3, U4 connectors | Modify line address setup of the header unit between lines. (Set up SW 13 and 14 on the interface P.C. board.) |
| L05 () | | Duplicated of indoor units with priority | Set up priority to only one indoor unit. |
| L06 | L06 | There are two or more indoor units set up with priority. | |
| L08 | L08 | Address setup error <ul style="list-style-type: none"> Only indoor addresses of all the connected indoor units are undefined. | Set up address again. |

(*) [L05]: Displayed on the indoor unit set up with priority.

[L06]: Displayed on the indoor unit except one set up with priority.

When you need to detect "E06" error, turn on a dip switch 09-bit 4.

2 Operation from remote controller is not accepted and a check code is displayed on 7-segment display of the interface P.C. board of the header unit.

| | 7-segment display of center unit | Cause | Countermeasures |
|---|----------------------------------|--|--|
| No response | L08 | Line addresses and indoor addresses of all the connected indoor units are unset. | Set up addresses. |
| | | There is no header unit of group control. | Set up group address. |
| | E19-00 | Indoor unit power is not turned on. | Turn on the power again. (In order of indoor → outdoor) |
| | | Indoor/outdoor communication line is not correctly connected to the header unit. (Fig. 1) (Indoor/outdoor cannot communicate before address setup.) | Correct cabling. |
| | | There is none of outdoor terminal resistance, or there are two or more resistances. (Before address setup) | Check SW30-bit 2 of the header unit. No connection between multiple refrigerant lines: SW30-bit 2 ON Connection between multiple refrigerant lines: SW30-bit 2 of the connected header unit is turned on only in one line. |
| | E19-02 (SMMS-Only) | When connecting indoor/outdoor communication line between outdoor units under condition of connected communication line between outdoor units (Fig. 2) | Correct cabling. |
| | | SW08 setup error | Turn all SW08 to OFF side. |
| | E20-01 | Address setup is performed with connecting indoor/outdoor communication line between outdoor units. (Fig. 3) | Correct cabling. |
| Address setup is performed under condition of connecting between multiple refrigerant lines. (Fig. 3) | | Correct cabling. | |



3 There is no display of a check code on 7-segment display on the interface P.C. board of the header unit though there is indoor unit which does not accept the operation from the remote controller.


| | 7-segment display of center unit | Cause | Countermeasures |
|---|----------------------------------|---|--|
| No response | None | Communication line is not connected between indoor and outdoor. | Modify cabling. |
| | | Line and indoor addresses are unset. (Unit which does not response to remote controller) | Set up address. |
| | | The power of the header unit of the group is not turned on in indoor group control. (Unit which does not response to remote controller) | Turn on the power. |
| | | Group address is set up to follower unit in the individual control. (Unit which does not response to remote controller) | Set [0] to group address in case of individual control. |
| No display on remote controller (No line is output.) | None | The power is not turned on. (Unit which is not displayed on remote controller) | Turn on the power. |
| | | Remote controller is not connected with cable. (Unit which is not displayed on remote controller) | Correct cabling. |
| | | Miscabling of remote controller (Unit which is not displayed on remote controller) | Correct cabling. |
| | | Remote controller communication circuit error (Unit which is not displayed on remote controller) If 230V is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails. | Remove FASTON terminal connected to remote controller terminals (A/B), and check the voltage. If voltage is not applied, replace P.C. board. (15 to 18V usually) |

4 In check for No. of connected outdoor units and connected Indoor units after address setup, diminished No. of connected units displayed. (There are outdoor/indoor units which do not operate in a test operation.)

| | Cause | Countermeasures |
|--|--|--|
| Number of connected outdoor units is short. | Miswiring of communication line between outdoor units or unconnected cable (Fig. 4) (Address setup operation has finished without recognition of miswired follower unit.) | After modification of wiring, set up address again and check No. of the connected outdoor units. |
| Number of connected indoor units is short. | Miswiring of communication line between indoor units or unconnected cable (Fig. 5) (Address setup operation has finished without recognition of miswired indoor unit.) | After modification of wiring, set up address again and check No. of the connected indoor units. |
| Number of outdoor units connected to group is short in group operation from remote controller. | Remote controller is not connected with cable. Miscabling of remote controller | Using the main remote controller connected to a group, start a test operation, specify the unit which does not operate (Unit unconnected to group), and then check cabling. |
| | Remote controller communication circuit error If 230V is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails. | Using the main remote controller connected to a group, start a test operation, specify the unit which does not operate (Unit unconnected to group). Remove Fasten receptacle connected to remote controller terminals (A/B), and check the voltage If voltage is not applied, replace P.C. board. (15 to 18V in normal time). |

If there are phenomena such as the output of a check code or the remote controller is not accepted when powered on after wiring work or during address setup operation, the following causes are considered.


A Check Code Is Displayed on the Remote Controller

| Check the code displayed on the indoor remote controller | Header unit 7-segment display | Cause | Countermeasures | |
|--|-------------------------------|---|--|---|
| E04 | — | When outdoor power is off | Check that the header outdoor unit power is on | |
| | L08 | Address setup error <ul style="list-style-type: none"> Only line addresses of the connected indoor units are undefined. The outdoor line address and the line addresses of all the indoor units do not match. The indoor addresses are duplicated. (Units except those displaying E04 are duplicated.) A header unit is not set up in group control (except groups displaying E04). | Set up the address again. | |
| | E08 ⇔ -XX Alternate blinking | Duplication of indoor addresses (address number in the subcode of the check code are duplicated). | Set up the address again. | |
| | E07 | There is no outdoor terminal resistance, or there are two or more resistances. (After address setup, when terminal resistance setup is changed after powering on) |  SW30 | Check SW30-bit 2 of the header unit. No connection between multiple refrigerant lines: SW30 bit 2 is on. Connection between multiple refrigerant lines: SW30 bit 2 of the connected header unit is turned on only for one line. |
| | | Transmission circuit error at the interface side (PC board failure) | Replace the interface PC board. | |
| | E06 | After address setup, communication from all the indoor units is interrupted under the condition that a normal operation can be performed. | Check and correct disconnection of the indoor/outdoor communication line (the communication line between the header unit and the leading indoor unit). Check for the influence of communication noise. | |
| E16 | E16 ⇔ -XX Alternate blinking | Exceeded the number or capacity of connected indoor units | Adjust the number or capacity of connected indoor units. | |
| E23 | E23 | Communication between outdoor units has stopped. | Check the number of connected outdoor units. Check that outdoor unit power is on. | |
| E25 | E25 | Duplication of outdoor addresses (only when an outdoor address was manually set up) | Do not use manual setup for outdoor addresses. | |
| E26 | E26 ⇔ -XX Alternate blinking | Number of connected outdoor units has decreased. <ul style="list-style-type: none"> When installing an outdoor backup The power of a follower unit is not turned on. | Correction of the cause of error occurrence <ul style="list-style-type: none"> If it occurs when installing a backup, clear the error after setup finishes. If the power of a follower unit is not turned on, turn on the power. | |
| L04 | L04 | Duplication of outdoor line addresses <ul style="list-style-type: none"> Line address setup error (occurred after connection between U1/U2 and U3/U4 connectors) | Modify the line address setup of the header unit between lines. (Set up SW13 and SW14 on the interface PC board.) | |
| L05 () | — | Duplication of indoor units with priority | Set up priority only for one indoor unit. | |
| L06 () | L06 | There are two or more indoor units set up with priority. | Among indoor units indicating "L05", set one unit with priority. | |
| L08 | L08 | Address setup error <ul style="list-style-type: none"> Only indoor addresses of all the connected indoor units are undefined. | Set up the addresses again. Modify the setup. | |

* "L05": Displayed on the indoor unit set up with priority

"L06": Displayed on the indoor units except the one set up with priority

Operation from the Indoor Remote Controller is not Accepted, and a Check Code is Displayed on the 7-Segment Display of the Interface P.C. Board of the Header Unit

| Indoor remote controller status | Header unit 7-segment display | Cause | Countermeasures |
|--|---------------------------------|---|---|
| No response | L08 | Line addresses and indoor addresses of all the connected indoor units are not set. | Set up addresses. |
| | | There is no header unit of group control. | Set up a group address. |
| | E19 ↔ -00 Alternate blinking | Indoor unit power is not turned on. | Turn on the power again. (In the order: indoor outdoor) |
| | | Indoor/outdoor communication line is not correctly connected to the U1/U2 terminal of the header unit . (Indoor/outdoor cannot communicate before address setup.) | Correct wiring |
| | | There is no of outdoor terminal resistance, or there are two or more resistances (before address setup). |  SW30 <p>Check SW30-bit 2 of the header unit. No connection between multiple refrigerant lines: SW30 bit 2 is on. Connection between multiple refrigerant lines: SW30 bit 2 of the connected header unit is turned on only for one line.</p> |
| | E19 ↔ -02 Alternate blinking | When connecting an indoor/outdoor communication line between outdoor units under the condition of a connected communication line between outdoor units. | Correct wiring |
| | | SW08 setup error (SMMS-i Only) | Turn all SW08 switches to off.(SMMS-i Only) |
| | E20 ↔ -01 Alternate blinking | Address setup is performed with connecting an indoor/ outdoor communication line between outdoor units. | Correct wiring |
| Address setup is performed under the condition of connecting multiple refrigerant lines. | | Correct wiring | |

There is no Display of a Check Code on the 7-Segment Display on the Interface P.C. Board of the Header Unit, Although there is Indoor Unit that is not Accepting Operation from the Indoor Remote Controller

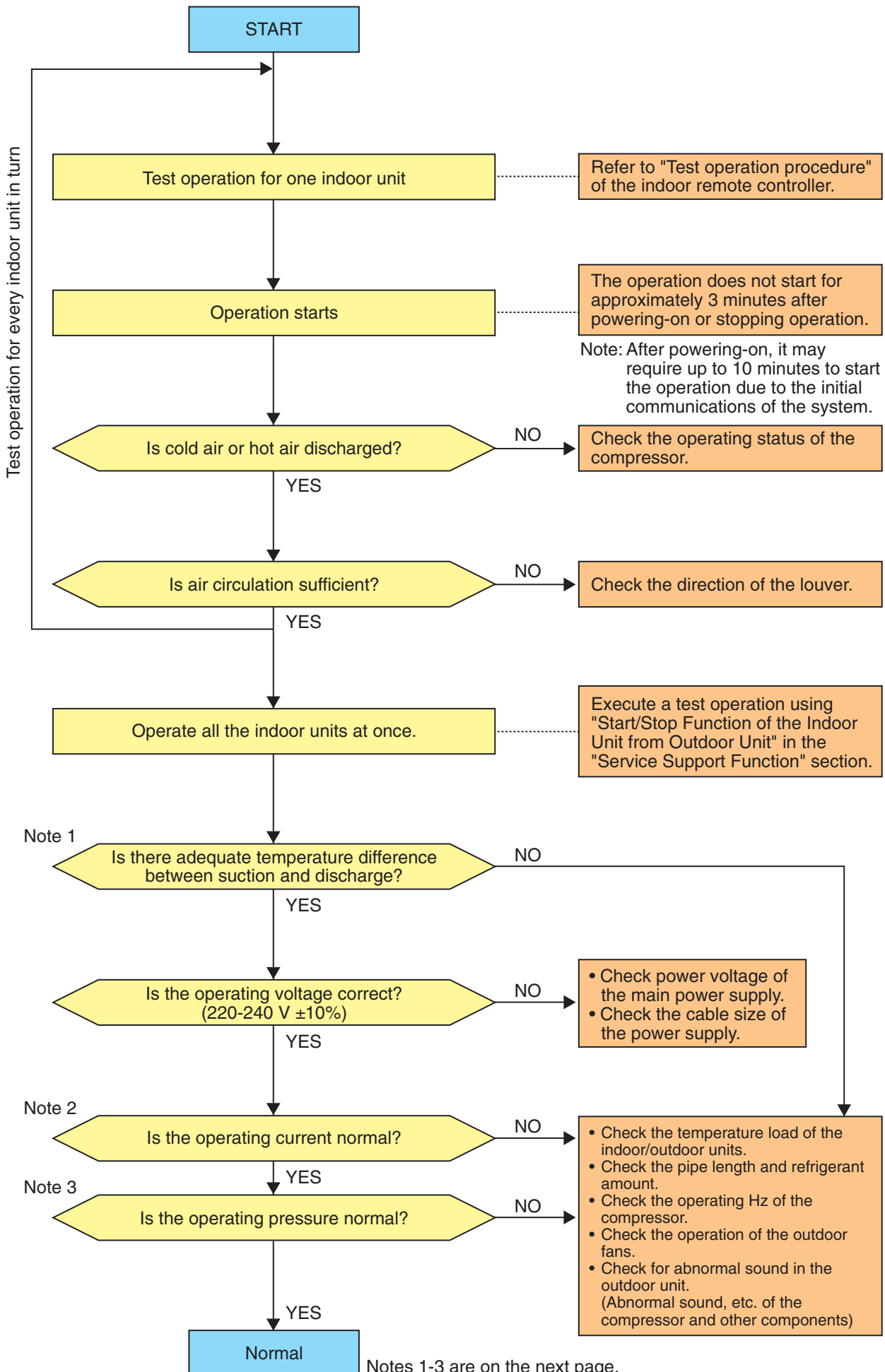
| Indoor remote controller status | Header unit 7-segment display | Cause | Countermeasures |
|---|-------------------------------|--|---|
| No response | None | The communication line is not connected between indoor and outdoor (the unit that does not respond to the indoor remote controller). | Modify the wiring. |
| | | Line address and indoor address are not set (the unit that does not respond to the indoor remote controller). | Set up the address. |
| | | The power of the header unit of the group is not turned on in indoor group control (the unit that does not respond to the indoor remote controller). | Turn on the power. |
| | | Group address is set to the follower unit for individual control (the unit that does not respond to the indoor remote controller). | Set the group address to "0" in the case of individual control. |
| No display on the indoor remote controller (no line is output.) | None | The power is not turned on (the unit that is not displayed on the indoor remote controller). | Turn on the power. |
| | | The indoor remote controller is not connected with a wire (the unit that is not displayed on the indoor remote controller). | Modify the wiring. |
| | | Miswiring of the indoor remote controller (the unit that is not displayed on the indoor remote controller) | Modify the wiring. |
| | | Indoor remote controller communication circuit error (the unit that is not displayed on the indoor remote controller) If 220 V (220-240 V) is incorrectly applied to the indoor remote controller terminal, the remote controller communication circuit fails. | Remove the fast-on terminal connected to indoor remote controller terminals A/B, and check the voltage. If voltage is not applied (normally 15 to 18V), replace the PC board. |

Note) (220-240V) is SHRM-i only)

**In Checking the Number of Connected Outdoor Units and Connected Indoor Units after Address Setup, a Lower Number of Connected Units is Displayed.
(There are Outdoor/Indoor Units that do not Operate in a Test Operation.)**

| Status | Cause | Countermeasures |
|--|---|---|
| The number of connected outdoor units is too few. | Miswiring of communication lines between outdoor units or an unconnected wire . (Address setup operation finished without recognizing a miswired follower unit.) | After modification of wiring, set up the addresses again and check the number of connected outdoor units. |
| The number of connected indoor units is too few. | Miswiring of communication lines between indoor units or an unconnected wire . (Address setup operation finished without recognizing a miswired indoor unit.) | After modification of wiring, set up the addresses again and check the number of connected indoor units. |
| The number of outdoor units connected to a group is too few in group operation from an indoor remote controller. | The indoor remote controller is not connected with wire. Miswiring of the indoor remote controller | Using the main indoor remote controller connected to a group, start a test operation, specify the unit that is not operating (the unit not connected to the group), and then check the wiring. |
| | Indoor remote controller communication circuit error If 220 V (220-240 V) is incorrectly applied to the remote controller terminal, the remote controller communication circuit fails. | Using the main indoor remote controller connected to a group, start a test operation and then specify the unit that is not operating (the unit not connected to the group). Remove the fast-on terminal connected to remote controller terminals A/B, and check the voltage. If voltage is not applied (normally 15 to 18 V), replace the PC board. |

Note) (220-240V) is SHRM-i only)



Note 1 : Criteria for the difference between suction and discharge temperatures

(1) Individual cooling operation

After operating for a minimum of 30 minutes in “COOL” mode, if the ΔT dry bulb temperature difference between suction and discharge air of the indoor unit is 8°C or more, it is normal.

(2) Individual heating operation

After operating for a minimum of 30 minutes in “HEAT” mode, if the ΔT dry bulb temperature difference between suction and discharge air of the indoor unit is 15°C or more, it is normal.

* If demand from the indoor unit on the outdoor unit is low because the difference between the temperature set by the remote controller and the temperature of the room is small, then the ΔT temperature difference is small.

* Consider that ΔT temperature difference may diminish in cases of a system in which the connected indoor unit capacity exceeds the outdoor unit capacity, the pipe length is long, or a large difference exists among outdoor units.

Note 2 : Criteria for operating power current

The table below shows the maximum current for each outdoor unit. Under standard conditions, operating current is about 80% of the value shown in the table below.

| Outdoor unit | MMY-MAP | 0804* | 1004* | 1204* | 1404* |
|---------------|---------|-------|-------|-------|-------|
| Current value | (A) | 23.5 | 25.5 | 28.5 | 33.2 |

Note 3 : Criteria for cycle status

(1) These data are based on operating a 4-way Cassette type air conditioner of 100% connection with standard piping length.

Data may vary depending on temperature conditions, installed pipe length, and room shape combinations, or indoor unit connection capacity.

For pressure criteria in different temperature conditions, refer to (2).

| Outdoor unit MMY- MAP | Operating mode | Pressure (MPa) | | Pipe surface temperature (°C) | | | | | | Number of compressor rotations (rps)* | | | Indoor fan | Air temperature condition (DB/WB) °C | |
|-----------------------------|-------------------|-------------------|-----|----------------------------------|------------------|------------------|----------------------------------|-----------------------------------|-------------------------------|--|------------|------------|---------------|--|---------|
| | | Pd | Ps | Discharge (TD) | Suction (TS1) | Suction (TS2) | Indoor heat exchanger (TC) | Outdoor heat exchanger (TE) | Liquid temperature (TL) | Compressor | Compressor | Compressor | | Indoor | Outdoor |
| | | | | | | | | | | 1 | 2 | 3 | | | |
| 0804* | Single cooling | 2.9 | 0.9 | 85 | 30 | 15 | 10 | 40 | 40 | 52 | 52 | — | High | 27/19 | 35/— |
| | Single heating | 3.0 | 0.7 | 85 | 5 | 5 | 35 | 3 | 30 | 55 | 55 | — | High | 20/— | 7/6 |
| 1004* | Single cooling | 3.0 | 0.8 | 87 | 30 | 15 | 10 | 40 | 40 | 68 | 68 | — | High | 27/19 | 35/— |
| | Single heating | 3.1 | 0.7 | 85 | 4 | 4 | 35 | 2 | 30 | 68 | 68 | — | High | 20/— | 7/6 |
| 1204* | Single cooling | 3.1 | 0.8 | 85 | 25 | 15 | 10 | 40 | 40 | 55 | 55 | 55 | High | 27/19 | 35/— |
| | Single heating | 3.1 | 0.7 | 85 | 4 | 4 | 35 | 3 | 30 | 58 | 58 | 58 | High | 20/— | 7/6 |
| 1404* | Single cooling | 3.0 | 0.8 | 90 | 25 | 15 | 10 | 40 | 40 | 65 | 65 | 65 | High | 27/19 | 35/— |
| | Single heating | 3.1 | 0.7 | 90 | 3 | 3 | 35 | 2 | 30 | 65 | 65 | 65 | High | 20/— | 7/6 |

* This compressor is driven with a 4-pole motor. The value of the compressor frequency (rps) measured with a clamp meter at the compressor lead line is two times the rotation count (rps) of the compressor.

* Each compressor may have a different frequency as a measure against resonance.

* The temperature of the indoor heat exchanger (TC) indicates TCJ sensor temperature when cooling, and TC2 sensor temperature when heating, respectively.

(2) Criteria for operating pressure

| Operating mode | | Single cooling | Single heating |
|--------------------------|---------------------|----------------|----------------|
| Indoor temperature (°C) | | 18~32 | 15~25 |
| Outdoor temperature (°C) | | 25~35 | 5~10 |
| Pressure | High pressure (MPa) | 2.0~3.3 | 2.5~3.3 |
| | Low pressure (MPa) | 0.5~0.9 | 0.5~0.7 |

* Criteria after 15 minutes or more has passed since operating started.

(3) On rotations of outdoor fans

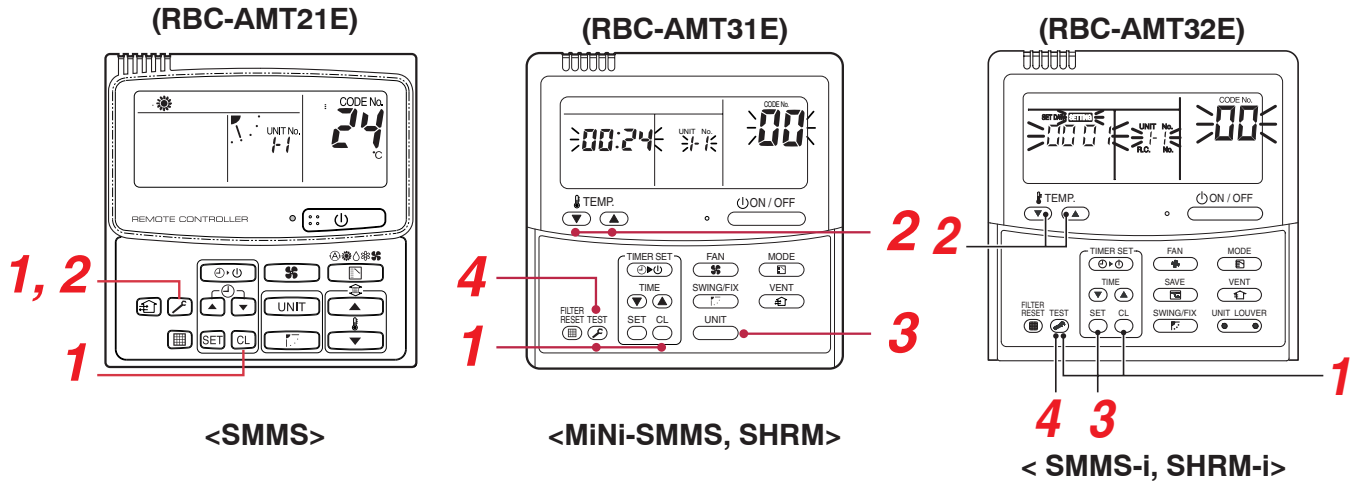
Outdoor fans may rotate slowly to control pressure when cooling with low outer air temperature or heating with excessive load. For control content, also refer to items in Section 5, “Control Outline: Outdoor Unit, Outdoor Fan Control.”

When using a remote controller with the model name RBC-AMT21E, RBC-AMT31E, AMT32E, the following monitor functions can be used.

Calling of display screen

[Contents]

The temperature or the operation status of the remote controller, indoor unit, or each sensor of the outdoor unit can be known by calling up the service monitor mode from the remote controller.



[Procedure]

<SMMS>

- 1 Push **CL** + **TEST** buttons simultaneously for 4 seconds or more to call up the service monitor mode.
- 2 Pushing **TEMP** button returns the display to the normal display.

<MiNi-SMMS, SHRM>

- 1 Push **CL** + **TEST** buttons simultaneously for 4 seconds or more to call up the service monitor mode. The service monitor goes on, and temperature of the item code **00** is firstly displayed.
- 2 Push the temperature setup **TEMP** / **TEMP** buttons to select the item number (Item code) to be monitored. For displayed codes, refer to the table below.
- 3 Push **UNIT** button to change the item to one to be monitored. Then monitor the indoor unit and sensor temperature or operation status in the corresponding refrigerant line.
- 4 Pushing **TEST** button returns the display to the normal display.

<SMMS-i, SHRM-i>

- 1 Push **CL** + **TEST** buttons simultaneously for 4 seconds or more to call up the service monitor mode. The service monitor goes on, and temperature of the CODE No. **00** is firstly displayed.
- 2 Push the temperature setup **TEMP** / **TEMP** buttons to select the CODE No. to be monitored. For displayed codes, refer to the table next page.
- 3 Push **SET** button to determine the item to be monitored. Then monitor the sensor temperature or operation status of indoor unit and the outdoor unit in the corresponding refrigerant line.
- 4 Pushing **TEST** button returns the display to the normal display.

SMMS, MiNi-SMMS, SHRM, SHRM-i

| | Item code | Data name | Unit | Display format | | Item code | Data name | Unit | Display format |
|---------------------------|-----------|-------------------------------------|-------|----------------|--|-----------|--|-------|----------------|
| Indoor unit data (NOTE 2) | 00 | Room temp (During control) | °C | | Outdoor unit individual data (NOTE 4, 5) | 10 | Compressor 1 discharge temp (Td1) | °C | X 1 |
| | 01 | Room temp (Remote controller) | °C | | | 11 | Compressor 2 discharge temp (Td2) | °C | X 1 |
| | 02 | Indoor suction temp (TA) | °C | X 1 | | 12 | High-pressure sensor detention pressure (Pd) | MPa | X 100 |
| | 03 | Indoor coil temp (TCJ) | °C | X 1 | | 13 | Low-pressure sensor detention pressure (Ps) | MPa | X 100 |
| | 04 | Indoor coil temp (TC2) | °C | X 1 | | 14 | Suction temp (TS) | °C | X 1 |
| | 05 | Indoor coil temp (TC1) | °C | X 1 | | 15 | Outdoor heat exchanger temp (TE) | °C | X 1 |
| | 06 | Indoor discharge temp (Tf) (NOTE 1) | °C | X 1 | | 16 | Temp at liquid side (TL) | °C | X 1 |
| | 08 | Indoor PMV opening | pulse | X 1/10 | | 17 | Outside ambient temp (TO) | °C | X 1 |
| System data | 0A | No. of connected indoor units | unit | | | 18 | Low-pressure saturation temp (TU) | °C | X 1 |
| | 0b | Total HP of connected indoor units | HP | X 10 | | 19 | Compressor 1 current (I1) | A | X 10 |
| | 0C | No. of connected outdoor units | unit | | | 1A | Compressor 2 current (I2) | A | X 10 |
| | 0d | Total HP of indoor units | HP | X 10 | | 1b | PMV1 + 2 opening | pulse | X 1/10 |
| | | | | | | 1d | Compressor 1, 2 ON/OFF | - | (NOTE 3) |
| | | | | | | 1E | Outdoor fan mode | - | 0 to 31 |
| | | | | | | 1F | Outdoor unit HP | HP | X 1 |

Note 1) Only a part of indoor unit types is installed with the discharge temperature sensor. This temperature is not displayed for other types.

Note 2) When the units are connected to a group, data of the header indoor unit only can be displayed.

Note 3) 01 : Compressor 1 only is ON. 10 : Compressor 2 only is ON. 11 : Both compressor 1 and 2 are ON.

Note 4) The item codes are described as the example of the header unit.

Note 5) The upper digit of an item code represents the outdoor unit number.

Monitor Function of Remote Controller Switch-1 (Continued) <SMMS-i>

When using a remote controller with the model name RBC-AMT32E

| | CODE No. | Data name | Display format | Unit | Remote controller display example |
|---------------------|----------|--|----------------|------|-----------------------------------|
| Indoor unit data *2 | 00 | Room temperature (During control) | ×1 | °C | [0024]=24°C |
| | 01 | Room temperature (Remote controller) | ×1 | °C | |
| | 02 | Indoor suction temperature (TA) | ×1 | °C | |
| | 03 | Indoor coil temperature (TCJ) | ×1 | °C | |
| | 04 | Indoor coil temperature (TC2) | ×1 | °C | |
| | 05 | Indoor coil temperature (TC1) | ×1 | °C | |
| | 06 | Indoor discharge temperature (TF) , 1 | ×1 | °C | |
| | 08 | Indoor PMV opening | ×1/10 | pls | [0150]=1500pls |
| System data | 0A | No. of connected indoor units | ×1 | unit | [0048]=48 units |
| | 0B | Total horsepower of connected indoor units | ×10 | HP | [0415]=41.5HP |
| | 0C | No. of connected outdoor units | ×1 | unit | [0004]=4 units |
| | 0D | Total horsepower of outdoor units | ×10 | HP | [0420]=42HP |

| | CODE No. | | | | Data name | Display format | Unit | Remote controller display example |
|-----------------------------------|----------|----|----|----|--|----------------|------|-----------------------------------|
| | U1 | U2 | U3 | U4 | | | | |
| Outdoor unit individual data 1 *3 | 10 | 20 | 30 | 40 | High-pressure sensor detention pressure (Pd) | ×100 | MPa | [0123]=1.23MPa |
| | 11 | 21 | 31 | 41 | Low-pressure sensor detention pressure (Ps) | ×100 | MPa | |
| | 12 | 22 | 32 | 42 | Compressor 1 discharge temperature (Td1) | ×1 | °C | [0024]=24°C |
| | 13 | 23 | 33 | 43 | Compressor 2 discharge temperature (Td2) | ×1 | °C | |
| | 14 | 24 | 34 | – | Compressor 3 discharge temperature (Td3) | ×1 | °C | |
| | 15 | 25 | 35 | 45 | Suction temperature (TS) | ×1 | °C | |
| | 16 | 26 | 36 | 46 | Outdoor coil temperature 1 (TE1) | ×1 | °C | |
| | 17 | 27 | 37 | – | Outdoor coil temperature 2 (TE2) | ×1 | °C | |
| | 18 | 28 | 38 | 48 | Temperature at liquid side (TL) | ×1 | °C | |
| | 19 | 29 | 39 | 49 | Outside ambient temperature (TO) | ×1 | °C | [0500]=500pls |
| | 1A | 2A | 3A | 4A | PMV1 + 2 opening | ×1 | pls | |
| | 1B | 2B | 3B | – | PMV4 opening | ×1 | pls | |
| | 1C | 2C | 3C | 4C | Compressor 1 current (I1) | ×10 | A | [0135]=13.5A |
| | 1D | 2D | 3D | 4D | Compressor 2 current (I2) | ×10 | A | |
| | 1E | 2E | 3E | – | Compressor 3 current (I3) | ×10 | A | |
| | 1F | 2F | 3F | 4F | Outdoor fan current (IFan) | ×10 | A | |

| | CODE No. | | | | Data name | Display format | Unit | Remote controller display example | |
|-----------------------------------|-----------------------------------|----|----|----|--|---|-------------------------------------|---|---|
| | U1 | U2 | U3 | U4 | | | | | |
| Outdoor unit individual data 2 *4 | 50 | 60 | 70 | 80 | Compressor 1 revolutions | ×10 | rps | [0642]=64.2rps | |
| | 51 | 61 | 71 | 81 | Compressor 2 revolutions | ×10 | rps | | |
| | 52 | 62 | 72 | – | Compressor 3 revolutions | ×10 | rps | | |
| | 53 | 63 | 73 | 83 | Outdoor fan mode | ×1 | mode | [0058]= 58 mode | |
| | 54 | 64 | 74 | 84 | Compressor IPDU 1 heat sink temperature | ×1 | °C | [0024]=24°C | |
| | 55 | 65 | 75 | 85 | Compressor IPDU 2 heat sink temperature | ×1 | °C | | |
| | 56 | 66 | 76 | – | Compressor IPDU 3 heat sink temperature | ×1 | °C | | |
| | 57 | 67 | 77 | 87 | Outdoor fan IPDU heat sink temperature | ×1 | °C | | |
| | Outdoor unit individual data 3 *5 | 58 | – | – | – | Heating/cooling recovery controlled , 5 | 0: Normal 1: Recovery controlled | | [0010]=Heating recovery controlled [0001]=Cooling recovery controlled |
| | | 59 | – | – | – | Pressure release , 5 | | | [0010]=Pressure release controlled [0001]=Discharge temperature release controlled |
| 5A | | – | – | – | Discharge temperature release , 5 | 0: Normal 1: Release controlled | | [0100]=U2 outdoor unit release controlled [0010]=U3 outdoor unit release controlled [0001]=U4 outdoor unit release controlled | |
| 5B | | – | – | – | Follower unit release (U2/U2/U4 outdoor units) , 5 | | | | |
| 5F | | 6F | 7F | 8F | Outdoor unit horsepower | ×1 | HP | [0016]=16HP | |

*1 Only a part of indoor unit types is installed with the discharge temperature sensor. This temperature is not displayed for other types.

*2 When the units are connected to a group, data of the header indoor unit only can be displayed.

*3 The first digit of an CODE No. indicates the outdoor unit number.

*4 The upper digit of an CODE No. -4 indicates the outdoor unit number.

1*, 5* ... U1 outdoor unit (Header unit)

2*, 6* ... U2 outdoor unit (Follower unit 1)

3*, 7* ... U3 outdoor unit (Follower unit 2)

4*, 8* ... U4 outdoor unit (Follower unit 3)

5 Only the CODE No. 5 of U1 outdoor unit (Header unit) is displayed.

Monitor Function of Remote Controller Switch-1 (Continued) <SHRM-i>

| | CODE No. | Data name | Display format | Unit | Remote controller display example | |
|---------------------|----------|---|----------------|------|-----------------------------------|------------------|
| Indoor unit data *1 | 00 | Room temperature (During control) *1 | ×1 | °C | [0024] = 24°C | |
| | 01 | Room temperature (Remote controller) | ×1 | °C | | |
| | 02 | Indoor suction temperature (TA) | ×1 | °C | | |
| | 03 | Indoor coil temperature (TCJ) | ×1 | °C | | |
| | 04 | Indoor coil temperature (TC2) | ×1 | °C | | |
| | 05 | Indoor coil temperature (TC1) | ×1 | °C | | |
| | 06 | Indoor discharge temperature (TF) *2 | ×1 | °C | | |
| | 08 | Indoor PMV opening | ×1/10 | pls | | [0150] = 1500pls |
| | F3 | Filter sign time | ×1 | h | | [2500] = 2500h |
| | F9 | Suction temperature of air to air heat exchanger (TSA) *2 | ×1 | °C | | [0024] = 24°C |
| System data | FA | Outside air temperature (TOA) *2 | ×1 | °C | | |
| | 0A | No. of connected indoor units | ×1 | unit | [0048] = 48 units | |
| | 0B | Total horsepower of connected indoor units | ×10 | HP | [0415] = 41.5HP | |
| | 0C | No. of connected outdoor units | ×1 | unit | [0004] = 4 units | |
| | 0D | Total horsepower of outdoor units | ×10 | HP | [0420] = 42HP | |

| | CODE No. | | | Data name | Display format | Unit | Remote controller display example |
|-----------------------------------|----------|----|----|--|----------------|------|-----------------------------------|
| | U1 | U2 | U3 | | | | |
| Outdoor unit individual data 1 *3 | 10 | 20 | 30 | High-pressure sensor detention pressure (Pd) | ×100 | MPa | [0123]=1.23MPa |
| | 11 | 21 | 31 | Low-pressure sensor detention pressure (Ps) | ×100 | MPa | |
| | 12 | 22 | 32 | Compressor 1 discharge temperature (Td1) | ×1 | °C | [0024]=24°C |
| | 13 | 23 | 33 | Compressor 2 discharge temperature (Td2) | ×1 | °C | |
| | 14 | 24 | 34 | Compressor 3 discharge temperature (Td3) | ×1 | °C | |
| | 15 | 25 | 35 | Suction temperature (TS1) | ×1 | °C | |
| | 16 | 26 | 36 | Outdoor coil temperature 1 (TE1) | ×1 | °C | |
| | 17 | 27 | 37 | Outdoor coil temperature 2 (TE2) | ×1 | °C | |
| | 18 | 28 | 38 | Temperature at liquid side (TL) | ×1 | °C | |
| | 19 | 29 | 39 | Outside ambient temperature (TO) | ×1 | °C | |
| | 1A | 2A | 3A | PMV1 + 2 opening | ×1 | pls | [0500]=500pls |
| | 1B | 2B | 3B | PMV4 opening | ×1 | pls | |
| | 1C | 2C | 3C | Compressor 1 current (I1) | ×10 | A | [0135]=13.5A |
| | 1D | 2D | 3D | Compressor 2 current (I2) | ×10 | A | |
| | 1E | 2E | 3E | Compressor 3 current (I3) | ×10 | A | |
| | 1F | 2F | 3F | Outdoor fan current (IFan) | ×10 | A | |

| | CODE No. | | | Data name | Display format | Unit | Remote controller display example |
|-----------------------------------|----------|----|----|---|-------------------------------------|------|---|
| | U1 | U2 | U3 | | | | |
| Outdoor unit individual data 2 *4 | 50 | 60 | 70 | Compressor 1 revolutions | ×10 | rps | [0642]=64.2rps |
| | 51 | 61 | 71 | Compressor 2 revolutions | ×10 | rps | |
| | 52 | 62 | 72 | Compressor 3 revolutions | ×10 | rps | |
| | 53 | 63 | 73 | Outdoor fan mode | ×1 | mode | [0058]= 58 mode |
| | 54 | 64 | 74 | Compressor IPDU 1 heat sink temperature | ×1 | °C | [0024]=24°C |
| | 55 | 65 | 75 | Compressor IPDU 2 heat sink temperature | ×1 | °C | |
| | 56 | 66 | 76 | Compressor IPDU 3 heat sink temperature | ×1 | °C | |
| | 57 | 67 | 77 | Outdoor fan IPDU heat sink temperature | ×1 | °C | |
| | 58 | — | — | Heating/cooling recovery controlled *5 | 0: Normal 1: Recovery controlled | | [0010]=Heating recovery controlled [0001]=Cooling recovery controlled |
| | 59 | — | — | Pressure release *5 | | | [0010]=Pressure release controlled |
| | 5A | — | — | Discharge temperature release *5 | | | [0001]=Discharge temperature release controlled |
| | 5B | — | — | Follower unit release (U2/U2/U4 outdoor units) *5 | 0: Normal 1: Release controlled | | [0100]=U2 outdoor unit release controlled [0010]=U3 outdoor unit release controlled [0001]=U4 outdoor unit release controlled |
| | 5F | 6F | 7F | Outdoor unit horsepower | ×1 | HP | [0014]=14HP |

- *1 When the units are connected to a group, data of the header indoor unit only can be displayed.
- *2 Only a part of indoor unit types is installed with the discharge temperature sensor. This temperature is not displayed for other types.
- *3 The first digit of an CODE No. indicates the outdoor unit number.
- *4 The upper digit of an CODE No. -4 indicates the outdoor unit number.
 1* , 5* ... U1 outdoor unit (Header unit)
 2* , 6* ... U2 outdoor unit (Follower unit 1)
 3* , 7* ... U3 outdoor unit (Follower unit 2)
- *5 Only the CODE No. 5* of U1 outdoor unit (Header unit) is displayed.

NOTE

- (1) When setting the line address from the remote controller, do not use addresses 29 and 30. Addresses 29 and 30 cannot be set up on the outdoor unit. If they are incorrectly used, the code "E04" (indoor/outdoor communication circuit error) is output.
- (2) When manual address setup has been done from a remote controller, and central control over refrigerant lines is to be done, setup the header unit of each line as follows:
 - Using SW13 and SW14 on the interface PC board of the header unit of each line, setup the line address for each line.
 - Except for the line with the smallest line address number, set SW03-bit 2 to "off" for the interface PC board of the header unit of lines connected to the same central control (put the resistance of the end terminals of the central control line, indoors and outdoors, into one).
 - Connect the relay connector between U1/U2 and U3/U4 of the header unit for each refrigerant line.
 - After that, set up the central control address.
(For central control address setup, refer to the installation manual of the central control devices.)

<SMMS-i, SHRM-i>


Confirmation of indoor unit address and position by using the remote controller

Confirmation of indoor unit address and position by using the remote controller (Used Button RBC-AMT31E)

[Confirmation of indoor unit address and the position]


1. When you want to know the indoor address though position of the indoor unit itself can be recognized;

<Procedure> (Operation while the air conditioner operates)


1 If it stops, push  button.

2 Push  button.

The unit No. **1-1** is displayed on the LCD. (Disappears after several seconds) The displayed unit No indicates the line address and indoor address.


If there is other indoor unit connected to the same remote controller (Group control unit), other unit No. is displayed every pushing  button.)

<RBC-AMT31E>

 button (left side of the button) (UNIT button)

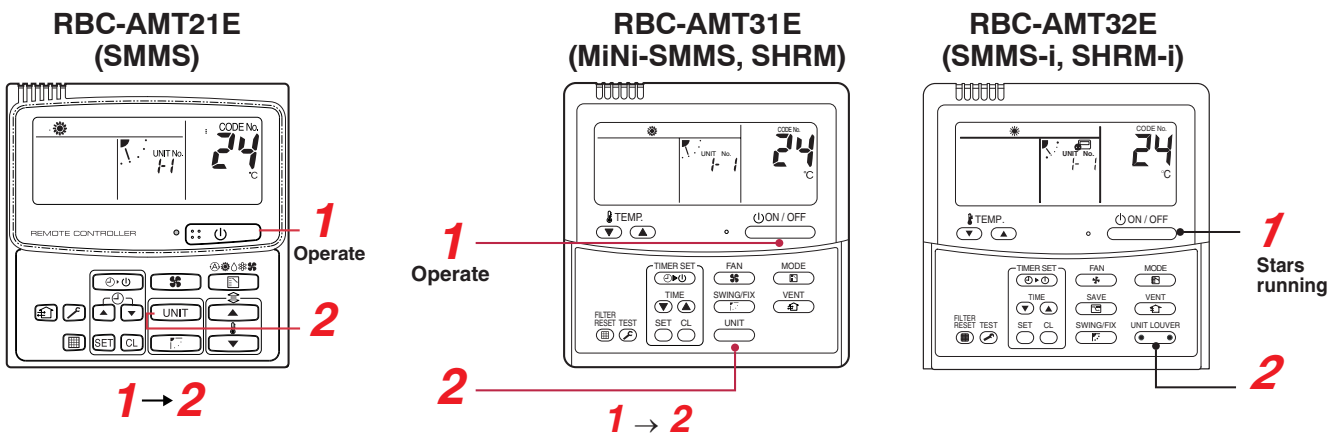
<RBC-AMT32E>

 button. (POWER ON/OFF button)

 button. (UNIT button)

<RBC-AMT21E>

Operation procedure



2. When you want to know position of the indoor unit using the address

- To confirm the unit numbers in a group control;

<Procedure> (Operation while the air conditioner stops)


The indoor unit numbers in a group control are successively displayed, and the corresponding indoor fan is turned on.

(Operation while the air conditioner stops)

1 Push + buttons simultaneously for 4 seconds or more.

- Unit No. **ALL** is displayed.
- The fans of all the indoor units in a group control are turned on.

 +  buttons (VENT, TEST button)


 button (UNIT Button)

<RBC-AMT21E>

2 Every pushing button, the indoor unit numbers in the group control are successively displayed.

- The firstly displayed unit No. indicates the address of the header unit.
- Only fan of the selected indoor unit is turned on.

 +  buttons (VENT, TEST button)

 button (left side of the button) (UNIT button)

<RBC-AMT32E>

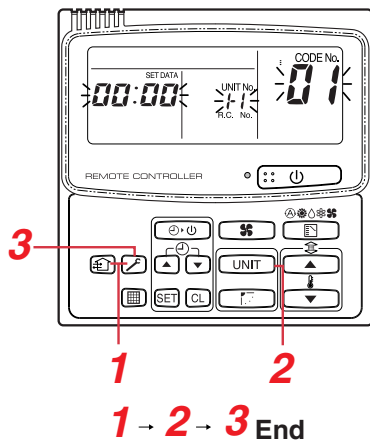
3 Push button to finish the procedure.

All the indoor units in group control stop.

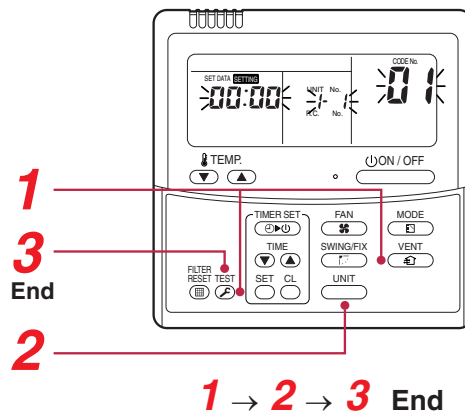
<RBC-AMT31E>

Operation procedure

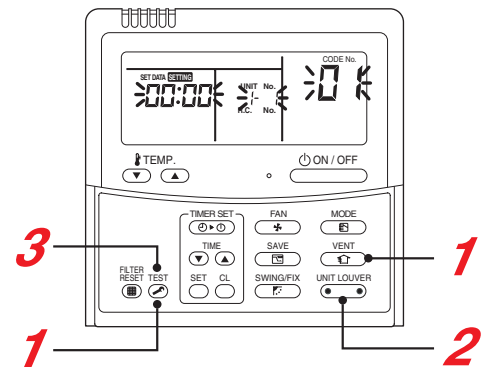
RBC-AMT21E (SMMS)



RBC-AMT31E (MiNi-SMMS, SHRM)



RBC-AMT32E (SMMS-i, SHRM-i)



3. To confirm all the unit numbers from an arbitrary wired remote controller;

<Procedure> (Operation while the air conditioner stops)

The indoor unit No. and position in the same refrigerant line can be confirmed.

An outdoor unit is selected, the indoor unit numbers in the same refrigerant line are successively displayed, and then its indoor unit fan is turned on.

NOTE

- To check all the indoor unit addresses using an arbitrary wired remote controller.
(When communication wirings of 2 or more refrigerant lines are interconnected for central control)

(Execute it while the units are stopped.)

You can check indoor unit addresses and positions of the indoor units in a single refrigerant line. When an outdoor unit is selected, the indoor unit numbers of the refrigerant line of the selected unit are indicated one after another and the fan and louvers of the indicated indoor units are activated.

<SMMS-i, SHRM-i>

1 Push the timer time + buttons simultaneously for 4 seconds or more.

Firstly, the line 1, item code **RC** (Address Change) is displayed. (Select outdoor unit.)

2 Using + buttons, select the line address.

3 Using button, determine the selected line address.

- The indoor unit address, which is connected to the refrigerant pipe of the selected outdoor unit is displayed and the fan is turned on.

4 Every pushing button, the indoor unit numbers in the identical pipe are successively displayed.

- Only fan of the selected indoor unit operates.

[To select another line address]

5 Push button to return to procedure 2).

- The indoor address of another line can be successively confirmed.

6 Push button to finish the procedure.

<RBC-AMT21E>

+ buttons (TIME, TEST Button)

+ button (UNIT, SWING Button)

button (CL Button)

<RBC-AMT21E>

+ buttons (TIME, TEST Button)

+ button

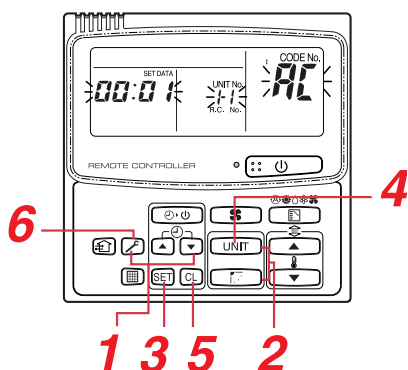
(UNIT, SWING Button)

button (CL Button)

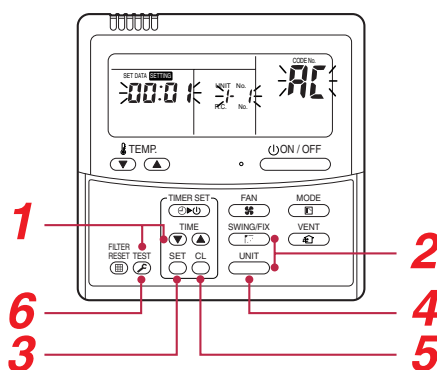
<RBC-AMT32E>

Operation procedure

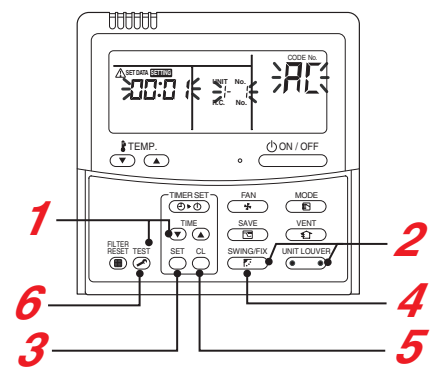
RBC-AMT21E (SMMS)



RBC-AMT31E (Mini-SMMS, SHRM)



RBC-AMT32E (SMMS-i, SHRM-i)



Change of indoor address from remote controller

Change of indoor address from wired remote controller

1. To change the indoor address in individual operation

(Wired remote controller : Indoor unit = 1 : 1) or group control

(When the setup operation with automatic address has finished, this change is available.)

<Procedure> (Operation while air conditioner stops)

- 1** Push simultaneously + + buttons for 4 seconds or more.
(The firstly displayed unit No. indicates the header unit in group control.)
- 2** In group control, select an indoor unit No. to be changed by button.
(The fan of the selected indoor unit is turned on.)
- 3** Using the setup temp. buttons, set **13** to the item code.
- 4** Using the timer time buttons, change the displayed setup data to a data which you want to change.
- 5** Push button.
- 6** Using the button, select the unit No. to be changed at the next time.
Repeat the procedure **4** to **6** and change the indoor address so that it is not duplicated.
- 7** After the above change, push button to confirm the changed contents.
- 8** If it is acceptable, push button to finish confirmation.

+ + buttons (SET, CL, TEST button)

button (UNIT button)

/ button (TEMP UP/DOWN button)

/ button (TIME UP/DOWN button)

<RBC-AMT21E>

+ + buttons (SET, CL, TEST button)

button (left side of the button) (UNIT button)

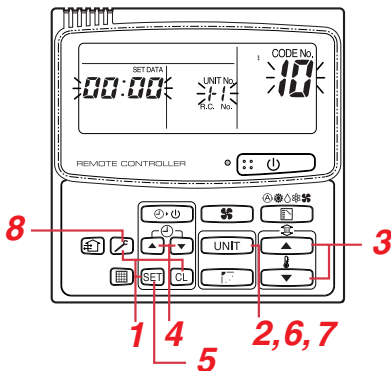
/ button (TEMP UP/DOWN button)

/ button (TIME UP/DOWN button)

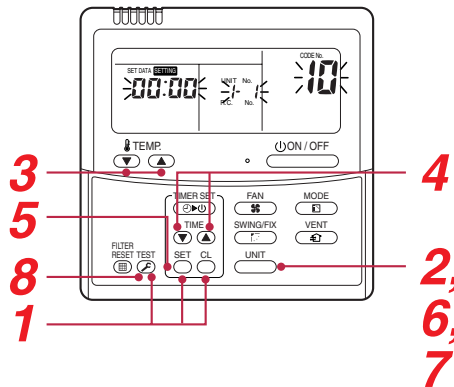
<RBC-AMT32E>

Operation procedure

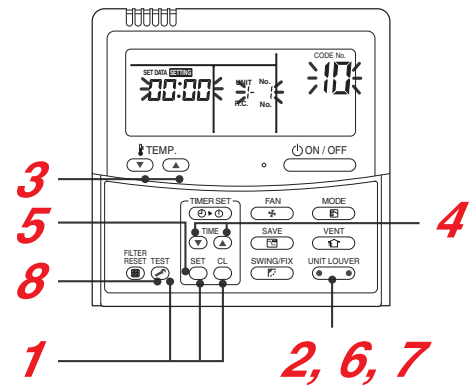
RBC-AMT21E
(SMMS)



RBC-AMT31E
(MiNi-SMMS, SHRM)



RBC-AMT32E
(SMMS-i, SHRM-i)



2. To change all the indoor addresses from an arbitrary wired remote controller;

(When the setup operation with automatic address has finished, this change is available.)

Contents : Using an arbitrary wired remote controller, the indoor unit address can be changed for each same refrigerant piping line.

Change the address in the address check/change mode.

<Procedure> (Operation while the air conditioner stops)

1 Push the timer time + buttons simultaneously for 4 seconds or more.

Firstly, the line 1, item code **RC** (Address Change) is displayed.

2 Using + buttons, select the line address.

3 Push button.

- The indoor unit address, which is connected to the refrigerant pipe of the selected outdoor unit is displayed and the fan is turned on.

First the current indoor address is displayed on the setup data.

(Line address is not displayed.)

4 The indoor address of the setup data moves up down by the timer time / buttons.

Change the setup data to a new address.

5 Push button to determine the setup data.

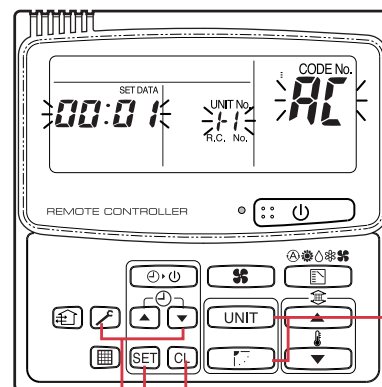
6 Every pushing button, the indoor unit numbers in the identical pipe are successively displayed. Only fan of the selected indoor unit operates.

Repeat the procedure **4** to **6** and change all the indoor addresses so that they are not duplicated.

7 Push button.

(All the displays on LCD go on.)

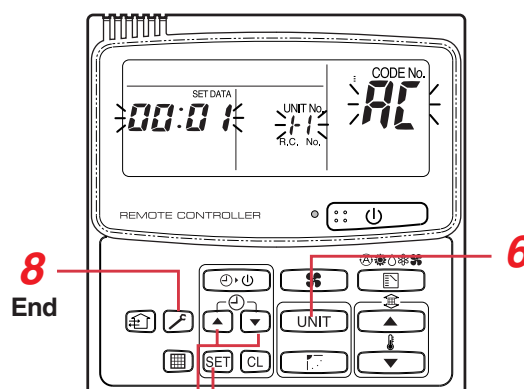
8 Push button to finish the procedure.



1 **3** Cancel of line selection

Here, if the unit No is not called up, the outdoor unit in this line does not exist.

Push button, and then select a line according to procedure **2**.



4 **5, 7** To finish the setup

Operation procedure

1 → **2** → **3** → **4** → **5** →

→ **6** → **7** → **8** End

- To change all the indoor addresses from an arbitrary wired remote controller;
(When the setup operation with automatic address has finished, this change is available.)

Contents :

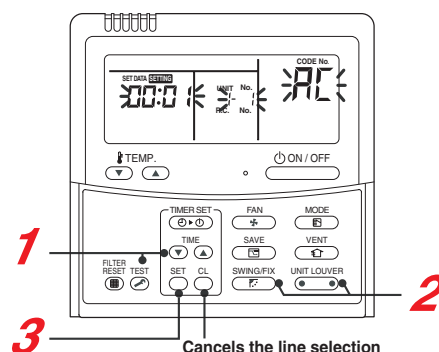
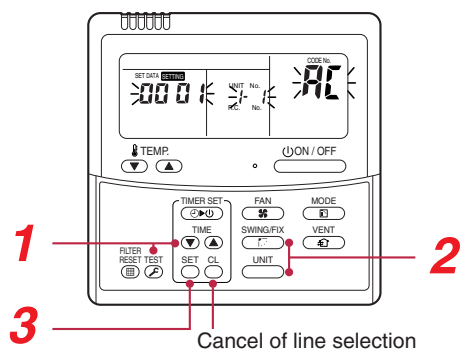
Using an arbitrary wired remote controller, the indoor unit address can be changed for each same refrigerant line

* Change the address in the address check/change mode.

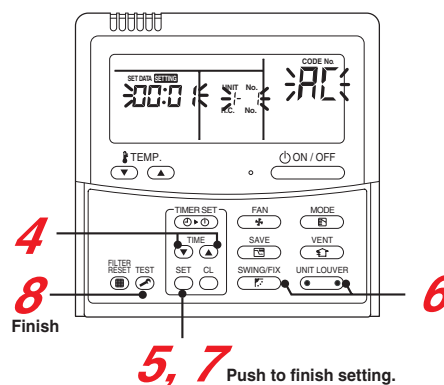
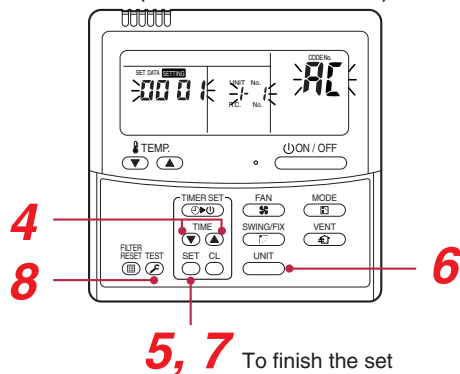
<Procedure> (Operation while air conditioner stops)

- 1** Push the timer time + buttons simultaneously for 4 seconds or more.
Firstly, the line 1, item code **RC** (Address Change) is displayed.
- 2** Using + buttons, select the line address.
- 3** Push button.
 - The indoor unit address, which is connected to the refrigerant pipe of the selected outdoor unit is displayed and the fan is turned on.
 - First the current indoor address is displayed on the setup data. (Line address is not displayed.)
- 4** The indoor address of the setup data moves up/down by the timer time / buttons.
Change the setup data to a new address.
- 5** Push button to determine the setup data.
- 6** Every pushing button, the indoor unit numbers in the identical pipe are successively displayed.
Only fan of the selected indoor unit operates.
Repeat the procedure **4** to **6** and change all the indoor addresses so that they are not duplicated.
- 7** Push button.
(All the displays on LCD go on.)
- 8** Push button to finish the procedure.

button (left side of the button) (UNIT button)



Here, if the unit No is not called up, the outdoor unit in this line does not exist.
Push CL button, and then select a line according to procedure **2**. (SMMS-i No function)



Operation procedure

1 → **2** → **3** → **4** →
5 → **6** → **7** → **8** End

**RBC-AMT31E
(MiNi-SMMS)**

**RBC-AMT32E
(SMMS-i, SHRM-i)**

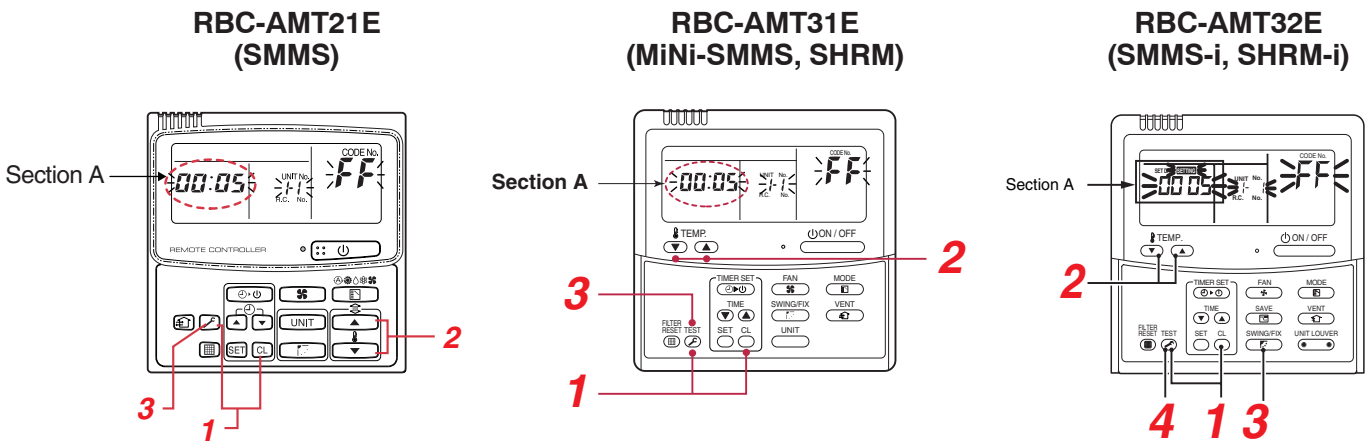
1. Clearing from the main remote controller

[Error clearing in outdoor unit]

Error of the outdoor unit is cleared by the unit of one refrigerant circuit system to which the indoor units operated by the remote controller. (Error of the indoor unit is not cleared.)
For clearing errors, the service monitor function of the remote controller is used.

<Method>

- 1** Change the mode to service monitor mode by pushing **CL** + **TEST** buttons simultaneously for 4 seconds or more.
- 2** Using **TEMP** buttons, set "FF" to item code.
The display in Section A in the following figure is counted with interval of 5 seconds as "0005" → "0004" → "0003" → "0002" → "0001" → "0000".
When the count arrives "0000", the error is cleared.
* However, counting from "0005" is repeated on the display.
- 3** When **TEST** button is pushed, the status returns to the normal status.



Operation procedure

1 → 2 → 3

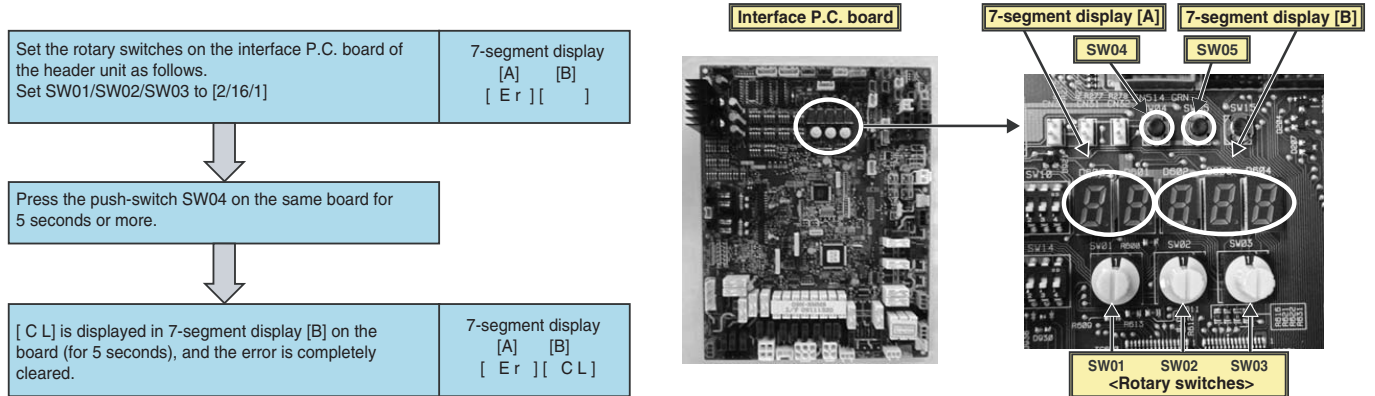
The status returns to the normal status.

[Error clearing in indoor unit]

Error in the indoor unit is cleared by **ON/OFF** button on the remote controller.
(Only error of the indoor unit connected with operating remote controller is cleared.)

Clearing Error by Using Switches on the Interface P.C. Board of the Header Unit

Using the switches on the interface P.C. board of the header unit, this function is to clear the currently detected error for each refrigerant circuit system without resetting the power supply. Errors in both outdoor and indoor units are once cleared, and error detection is performed again.



Clearing Error by Resetting Power

This function is provided to clear error in a system by resetting the power of all the outdoor and the indoor units. As same as the clearing method by the interface P.C. board, errors of both the outdoor and the indoor units are once cleared, and error detection is performed again.

<Method>

- (1) Be sure to reset power of both the outdoor and the indoor units.
- (2) Turn on the power of the indoor unit prior to the power of the outdoor unit.
(If the power is turned on in reverse order, a check code [E19] (No. of header unit error) is output.)

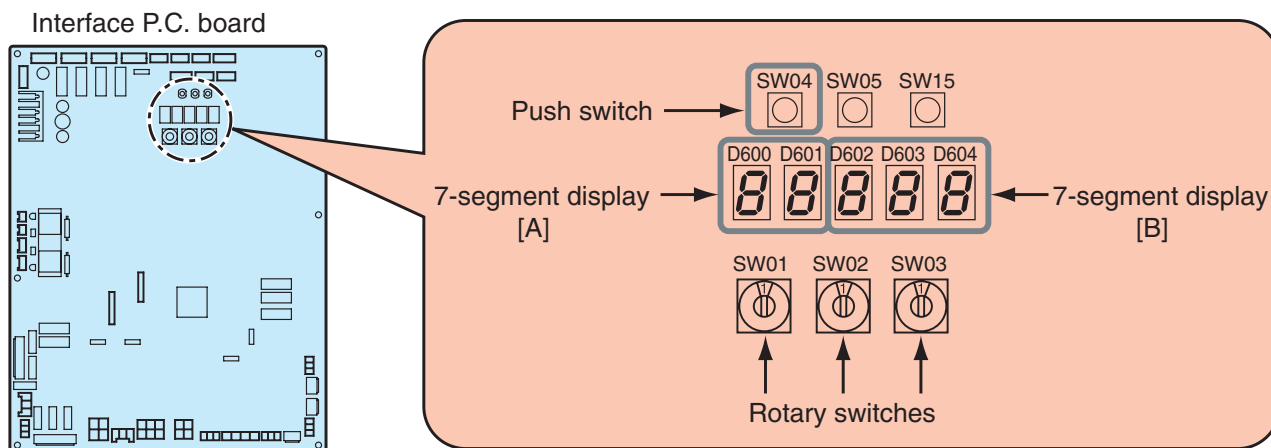
NOTE

After power reset, it requires usually 3 minutes to power-on due to the initial communication of the system. In some cases, it requires max. 10 minutes.

7-Segment Display Function

7-segment display on outdoor unit (interface P.C. board)

The interface control P.C. board features a 7-segment LED display designed to check operational status. Display items can be changed by changing the combination of the number settings of rotary switches provided on the P.C. board (SW01, SW02 and SW03).



◆ Checking Procedure to Be Followed in Event of Abnormal Shutdown

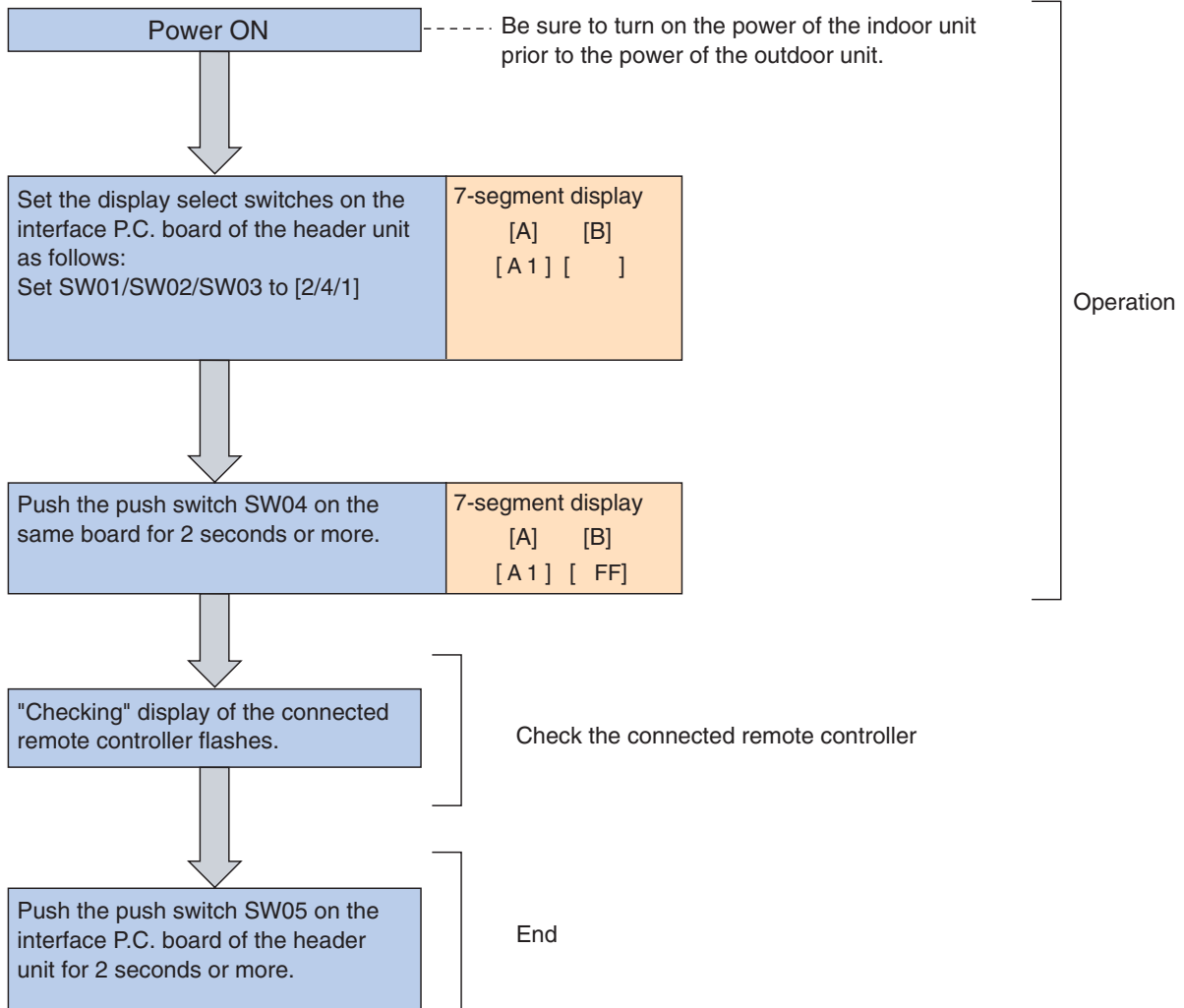
If the system is shut down due to an error in the outdoor unit, perform checks in the following steps:

- 1 Open the panel of the outdoor unit and inspection window of the electric parts box, and check the 7-segment display.**
 The check code is displayed in the right-hand section of the 7-segment display [B].
 [U1] [000] ([000]: Check code)
 * To check the check code, set the rotary switches SW01/SW02/SW03 to [1/1/1].
 If there is a sub-code, the display alternates between the check code [000] (3 seconds) and the subcode [000] (1 second).
- 2 Check the check code and follow the applicable diagnostic procedure.**
- 3 If the 7-segment display shows [U 1] [E2B], there is an error in a follower unit.**
 Push the push switch SW04 on the header unit and hold for several seconds.
 As the fan of the outdoor unit in which the error has occurred comes on, open the panel of the unit, and check the check code shown on the 7-segment display.
- 4 Perform checks in accordance with the diagnostic procedure applicable to the check code.**

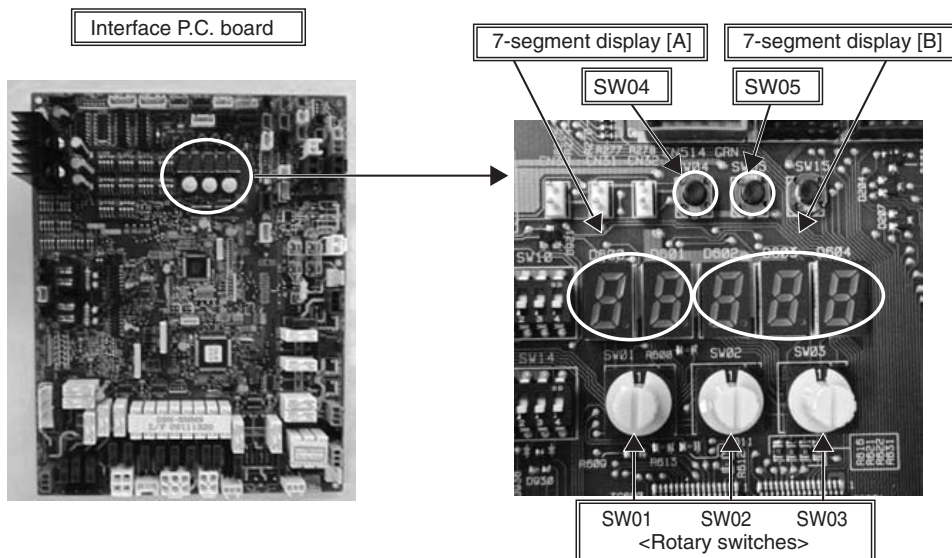
Remote Controller Distinction Function

This function is provided to distinguish the remote controller connected to the indoor unit from the outdoor unit for a refrigerant circuit system by using switches on the interface P.C. board of the header unit.

<Distinction procedure>



- Other end conditions:
1. 10 minutes has passed
 2. SW01, SW02, or SW03 changed to other position.



Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to open or close forcedly PMV for 2 minutes in all the indoor units by the switch operation on the interface P.C. board of the header unit.
This function is also used to open PMV fully when turning off the power and executing an operation.

<Operation>

[Open fully]

Set the switches SW01/SW02/SW03 on the interface P.C. board of the header unit to [2/3/1], and push SW04 for 2 seconds or more.

(Display appears on 7-segment display for 2 minutes as follows.) [P] [FF]

[Close fully]

Set the switches SW01/SW02/SW03 on the interface P.C. board of the header unit to [2/3/1], and push SW05 for 2 seconds or more.

(Display appears on 7-segment display for one minute as follows.) [P] [00]

[Clear]

After 2 minutes (1 minutes for “Close fully”) after setting up, the opening automatically returns to the normal opening.

Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function in Outdoor Unit

This function is provided to forcedly open or close fully P.M.V. (PMV1/PMV2, PMV4) used in the outdoor unit for 2 minutes.

[PMV1/PMV2 Open fully]

On the interface P.C. board of the outdoor unit, set the dip switch [SW12·bit1] to [OFF], [SW12·bit2] to [OFF], and shortcircuit CN30.

[PMV1/PMV2 Close fully]

On the interface P.C. board of the outdoor unit, set the dip switch [SW12·bit1] to [OFF], [SW12·bit2] to [OFF], and shortcircuit CN31.

[PMV4 Open fully]

On the interface P.C. board of the outdoor unit, set the dip switch [SW12·bit1] to [OFF], [SW12·bit2] to [ON], and shortcircuit CN30.

[PMV4 Close fully]

On the interface P.C. board of the outdoor unit, set the dip switch [SW12·bit1] to [OFF], [SW12·bit2] to [ON], and shortcircuit CN31.

[Clear]

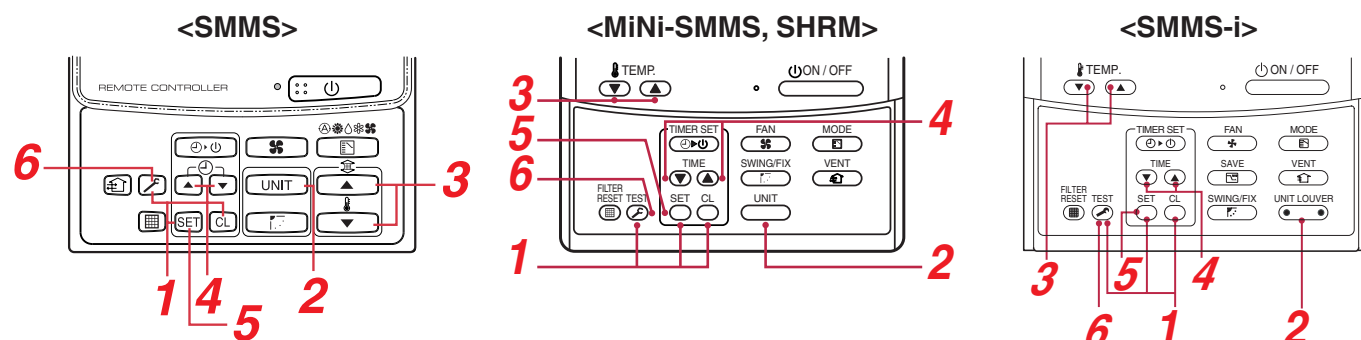
For both open fully and close fully, after 2 minutes, the opening returns to the normal opening.

Be sure to remove the cord used for short-circuit after confirmation, and set the dip switch [SW12·bit1] to [OFF] and [SW12·bit2] to [OFF].

Indoor Unit

<Setup of Selecting Function in Indoor Unit> (Be sure to Execute Setup by a Wired Remote Controller)

<Procedure> Execute the setup operation while the unit stops.



- 1 Push **SET**, **CL** and **TEST** (**SET**, **CL** and **TEST**) buttons simultaneously for 4 seconds or more.
The firstly displayed unit No. indicates the master indoor unit address in the group control.
In this time, the fan of the selected indoor unit is turned on.
- 2 Every pushing **UNIT** (**UNIT**) (**UNIT LOUVER** **SMMS-i** only) button, the indoor unit numbers in the group control are successively displayed.
In this time, the fan of the selected indoor unit only is turned on.
- 3 Specify the item code (DN) using the setup temperature **UP** + **DOWN** (**UP** + **DOWN**) buttons.
- 4 Select the setup data using the timer time **UP** + **DOWN** (**UP** + **DOWN**) buttons.
(When selecting the DN code to “33”, change the temperature indication of the unit from “°C” to “°F” on the remote controller.)
- 5 Push **SET** (**SET**) button. (OK if display goes on.)
 - To change the selected indoor unit, return to procedure 2 .
 - To change the item to be set up, return to procedure 3 .
- 6 Pushing **TEST** (**TEST**) button returns the status to normal stop status.

TYPE

Item code [10]

| Setup data | Type | Abbreviated Model name |
|------------|---|------------------------|
| 0000 | 1-way Air Discharge Cassette | MMU-AP***SH |
| 0001 | 4-way Air Discharge Cassette | MMU-AP***H |
| 0002 | 2-way Air Discharge Cassette | MMU-AP***WH |
| 0003 | 1-way Air Discharge Cassette (Compact type) | MMU-AP***YH |
| 0004 | Concealed Duct Standard | MMD-AP***BH |
| 0005 | Slim Duct | MMD-AP***SPH, SH |
| 0006 | Concealed Duct High Static Pressure | MMD-AP***H |
| 0007 | Under Ceiling | MMC-AP***H |
| 0008 | High Wall | MMK-AP***H |
| 0010 | Floor Standing Cabinet | MML-AP***H |
| 0011 | Floor Standing Concealed | MML-AP***BH |
| 0013 | Floor Standing | MMF-AP***H |
| 0014 | Compact 4-way Air Discharge Cassette | MMU-AP***MH |
| 0018 | Console | MML-AP***NE-H |
| 0050 | DX coil | MMD-VNK***HEXE |

NOTE : 0005, 0014 SMMS No function
0018, 0050 SMMS-i only

Indoor unit capacity

Item code [11]

| Setup data | Model |
|------------|---------|
| 0000*1 | Invalid |
| 0001 | 007 |
| 0003 | 009 |
| 0005 | 012 |
| 0007 | 015 |
| 0009 | 018 |
| 0011 | 024 |
| 0012 | 027 |
| 0013 | 030 |
| 0015 | 036 |
| 0017 | 048 |
| (0018) | (056) |
| (0021) | (072) |
| (0023) | (096) |

NOTE : 0001*1 SHRM-i only

*1 Default value stored in EEPROM mounted on service P.C. board.

(Items necessary to perform the applied control at the local site are described.)

| DN | Item | Description | At shipment |
|----|--|--|---|
| 01 | Filter sign lighting time | 0000 : None 0002 : 2500H 0004 : 10000H 0001 : 150H 0003 : 5000H | According to type |
| 02 | Dirty state of filter | 0000 : Standard 0001 : High degree of dirt (Half of standard time) | 0000 : Standard |
| 03 | Central control address | 0001 : No.1 unit to 0064 : No.64 unit 0099 : Unfixed | 0099 : Unfixed |
| 04 | Specific indoor unit priority | 0000 : No priority to 0001 : Priority | 0000 : No priority |
| 06 | Heating temp shift | 0000 : No shift to 0001 : +1°C 0002 : +2°C to 0010 : +10°C (Up to +6 recommended) | 0002 : +2°C (Floor type 0000: 0 °C) |
| 0d | Existence of [AUTO] mode | 0000 : Provided 0001 : Not provided (Automatic selection from connected outdoor unit) | 0001 : Not provided |
| 0E | Follows operation mode of the header unit | 0000 : Does not follow 0001 : Follows | 0000 : Not provided |
| 0F | Cooling only | 0000 : Heat pump 0001 : Cooling only (No display of [AUTO] [HEAT]) | 0000 : Heat pump |
| 10 | Type | 0000 : (1-way air discharge cassette) 0001 : (4-way air discharge cassette) to 0037 | According to model type |
| 11 | Indoor unit capacity | 0000 : Unfixed 0001 to 0034 | According to capacity type |
| 12 | Line address | 0001 : No.1 unit to 0030 : No.30 unit | 0099 : Unfixed |
| 13 | Indoor unit address | 0001 : No.1 unit to 0064 : No.64 unit | 0099 : Unfixed |
| 14 | Group address | 0000 : Individual 0002 : Follower unit of group 0001 : Header unit of group | 0099 : Unfixed |
| 19 | Louver type (Adjustment of air direction) | 0000 : Not provided 0004 : [4-way Air Discharge Cassette type] and [Under Ceiling type] 0001 : Swing only | 0001 : Swing only |
| 1E | Temp difference of [AUTO] mode selection COOL → HEAT, HEAT → COOL | 0000 : 0 deg to 0010 : 10 deg (For setup temperature, reversal of COOL/HEAT by } (Data value)/2) | 0003 : 3 deg (Ts ±1.5) |
| 28 | Automatic restart of power failure | 0000 : None 0001 : Restart | 0000 : None |
| 29 | Operation condition of humidifier | 0000 : Usual 0001 : Condition ignored (Detection control for heat exchanger temperature) | 0000 : Usual |
| 2A | Selection of option/error input (CN70) | 0000 : Filter input 0002 : None 0001 : Alarm input (Air washer, etc.) | 0002 : None |
| 2E | HA terminal (CN61) select | 0000 : Usual 0001 : Leaving-ON prevention control | 0000 : Usual (HA terminal) |
| 30 | Automatic elevating grille | 0000 : Unavailable (Standard, Oil guard panel) 0001 : Available (Auto grille, Oil guard, Auto grille panel) | 0000 : Unavailable |
| 31 | Ventilating fan control | 0000 : Unavailable 0001 : Available | 0000 : Unavailable |
| 32 | TA sensor selection | 0000 : Body TA sensor 0001 : Remote controller sensor | 0000 : Body TA sensor |
| 33 | Temperature unit select | 0000 : °C (at factory shipment) 0001 : °F | 0000 : °C |
| 40 | Control for humidifier (+ drain pump control) | 0000 : None 0001 : Humidifier + Vaporizing system (Pump ON) 0002 : Humidifier + Ultrasonic system (Pump ON after specified time passed) (Unused) 0003 : Humidifier + Natural drain system (Pump OFF) | 0003 : Humidifier ON, Pump OFF |
| 5d | High ceiling selection (Air volume selection) | [4-way Air Discharge Cassette type] and [Under Ceiling type] 0000 : Standard filter 0001 : Super-long life filter 0003 : High efficiency filter (SHRM only) [Concealed Duct Standard type] 0000 : Standard static pressure (40Pa) 0001 : High static pressure 1 (70Pa) 0003 : High static pressure 2 (100Pa) 0005 : Correspond to quiet sound 0006 : Low static pressure (20Pa) | 0000 : Standard |
| 60 | Timer set (Wired remote controller) | 0000 : Available (Operable) 0001 : Unavailable (Operation prohibited) | 0000 : Available |
| 62 | Anti-ceiling smudging control | 0000 : Clear | 4- way Air Discharge Cassette type only |
| 92 | Outside interlock release condition | 0000 : Operation stop 0001 : Release communication signal receive | 0000 : Operation stop |

NOTE 1 : 5d and F0 to F04 refe to next page.

NOTE 2 : 0E, 29, 30 MiNi-SMMS, SHRM only.

NOTE 3 : 0E, 10, 13, 19 SHRM-i refe to next page.

Function selecting item numbers (DN) (Continued)

(Items necessary to perform the applied control at the local site are described.)

MINI-SMMS

| DN | Item | Description | At shipment | | | | | |
|----|---|---------------|--------------------------|----------|------------------------|------------------|------------------------|------|
| 5d | High ceiling selection (Air volume selection) | | | | | | | |
| | Indoor unit type | Item | Set up data | | | | | |
| | | | 0 | 1 | 2 | 3 | 4 | |
| | 4-way Air Discharge Cassette | MMU-AP***1H | High ceiling | Standard | High ceiling (1) | — | High ceiling (3) | — |
| | | | Filter | Standard | Super long life filter | — | High efficiency filter | — |
| | Compact 4-way Air Discharge Cassette | MMU-AP***1MH | High ceiling | Standard | — | High ceiling (2) | High ceiling (3) | — |
| | 1-way Air Discharge Cassette | MMU-AP***2SH | High ceiling | Standard | High ceiling (1) | — | High ceiling (3) | — |
| | Concealed Duct Standard | MMU-AP***1BH | External static pressure | 40Pa | 70Pa | — | 100Pa | 20Pa |
| | Slim Duct | MMU-AP***1SPH | External static pressure | 10Pa | 20Pa | — | 35Pa | 50Pa |

SHRM-i only

| DN | Item | Description | At shipment |
|----|--|---|-------------------------|
| 0E | FS unit Connection set of multiple indoor units | 0000: Standard (1 FS unit : 1 indoor unit) 0001: Multiple units connected ((1 FS unit : Multiple indoor units) | 0000:Standard |
| 10 | Type | 0001: 4-way Cassette | Depending on model type |
| 13 | Type | 0001: No.1 unit to 0048: No.48 unit | 0099: Unfixed |
| 19 | Group address | 0000: No louver 0001: Swing only 0002: (1-way Cassette type, Ceiling type) 0003: (2-way Cassette type) 0004: (4-way Cassette type) | According to type |

SMMS-i, SHRM-i

| DN | Item | Description | At shipment |
|----|-------------------------------------|--|-----------------|
| F0 | Swing mode | 0001: Standard 0002: Dual swing 0003: Cycle swing | 0001: Standard |
| F1 | Louver fixed position (Louver No.1) | 0000: Release 0001: Horizontal discharge position 0005: Downward discharge position | 0000: Not fixed |
| F2 | Louver fixed position (Louver No.2) | 0000: Release 0001: Horizontal discharge position 0005: Downward discharge position | 0000: Not fixed |
| F3 | Louver fixed position (Louver No.3) | 0000: Release 0001: Horizontal discharge position 0005: Downward discharge position | 0000: Not fixed |
| F4 | Louver fixed position (Louver No.4) | 0000: Release 0001: Horizontal discharge position 0005: Downward discharge position | 0000: Not fixed |

Function selecting item numbers (DN) (Continued) <SHRM-i>

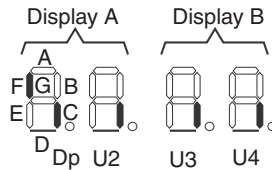
| DN | Item | Description | At shipment | | | | | | |
|---------|---|--|----------------------------|---|---|--------------|-----------------|--------------|--------------|
| 5d | High-ceiling adjustment (Air flow selection) | 1-way cassette (SH) | 0000: Standard | | | | | | |
| | | Value | Type | AP015, AP018 | AP024 | | | | |
| | | 0000 | Standard (factory default) | 3.5 m or less | 3.8 m or less | | | | |
| | | 0001 | High-ceiling (1) | 4.0 m or less | 4.0 m or less | | | | |
| | | 0003 | High-ceiling (3) | 4.2 m or less | 4.2 m or less | | | | |
| | | 2-way cassette | | | | | | | |
| | | Value | Type | AP007~AP030 | AP036~AP056 | | | | |
| | | 0000 | Standard (factory default) | 2.7 m or less | 2.7 m or less | | | | |
| | | 0001 | High-ceiling (1) | 3.2 m or less (*) | 3.0 m or less | | | | |
| | | 0003 | High-ceiling (3) | 3.8 m or less (*) | 3.5 m or less | | | | |
| | | * The high-ceiling installation of model AP007 to AP012 can only be undertaken when the combined capacity of the indoor units connected is 100% or less than the capacity of the outdoor unit. Do not proceed with high-ceiling installation if this limit is exceeded. | | | | | | | |
| | | 4-way cassette | | | | | | | |
| | | Value | Type | AP009~AP012 | | AP015~AP018 | | | |
| | | | Air flow at outlet | 4 directions | 3 directions | 2 directions | 4 directions | 3 directions | 2 directions |
| | | 0000 | Standard (factory default) | 2.7 m | 2.8 m | 3.0 m | 2.8 m | 3.2 m | 3.5 m |
| 0001 | High-ceiling (1) | — | — | — | 3.2 m | 3.5 m | 3.8 m | | |
| 0003 | High-ceiling (3) | — | — | — | 3.5 m | 3.8 m | — | | |
| Value | Type | AP024~AP030 | | | AP036~AP056 | | | | |
| | Air flow at outlet | 4 directions | 3 directions | 2 directions | 4 directions | 3 directions | 2 directions | | |
| 0000 | Standard (factory default) | 3.0 m | 3.3 m | 3.6 m | 3.0 m | 3.3 m | 3.6 m | | |
| 0001 | High-ceiling (1) | 3.3 m | 3.5 m | 3.8 m | 3.3 m | 3.5 m | 3.8 m | | |
| 0003 | High-ceiling (3) | 3.6 m | 3.8 m | — | 3.6 m | 3.8 m | — | | |
| Ceiling | | | | | | | | | |
| Value | Type | AP015~AP056 | | | | | | | |
| 0000 | Standard (factory default) | 3.5 m or less | | | | | | | |
| 0001 | High-ceiling (1) | 4.0 m or less | | | | | | | |
| | Built-in filter | 2-way cassette 0000: Standard filter (factory default) 0001: Super long-life filter 4-way cassette 0000: Standard filter (factory default) Ceiling 0000: Standard filter (factory default) Concealed duct standard 0000: Standard filter (factory default) 0001: High-performance filter (65%, 90%) | | | | | | | |
| | Static pressure selection | Concealed duct standard 0000: Standard (factory default) 0001: High static pressure 1 0003: High static pressure 2 0006: Low static pressure | | | Slim Duct (AP007~AP018) 0000: Standard (factory default) 0001: High static pressure 1 0003: High static pressure 2 0006: High static pressure 3 | | | | |
| 60 | Timer setting (wired remote controller) | 0000: Available (can be performed) | | 0001: Unavailable (cannot be performed) | | | 0000: Available | | |

Function selecting item numbers (DN) (Continued) <SHRM-i>

Codes (DN codes) for changing settings (Necessary for local advanced control)

| DN | Item | Description | | At shipment |
|----|---|---|--|------------------------------|
| 40 | Humidifier type setting | 0000: No humidifier | 0001: Humidifier | Depends on the type |
| 47 | Ventilation fan speed during nighttime heat purge operation | 0000: Always LOW | 0001: Operate at ventilation fan speed set last time the operation was stopped | 0000: Always LOW |
| 48 | Unbalanced fan speed ventilation | 0000: Invalid 0002: SA < EA | 0001: SA > EA | 0000: Invalid |
| 4C | Nighttime heat purge setting | 0000: Invalid 0001: Start in 1 hour | to 0048: Start in 48 hours | 0000: Invalid |
| 4E | Linkage with external devices | 0000: ON / OFF linked 0002: OFF linked | 0001: ON linked | 0000: ON / OFF linked |
| 5C | Damper output | 0000: Normal | 0001: Nighttime heat purge compatible | 0000: Normal |
| 60 | Timer setting (Wired remote controller) | 0000: Possible | 0001: Not possible | 0000: Possible |
| BB | Humidity judgment by outdoor temperature | 0000: Not judged | 0001: Judged | 0000: Not judged |
| BD | Continuous humidifying time | 0001: 1 hour | to 0020: 20 hours | 0006: 6 hours |
| BE | Delay after drainage | 0015: 15 minutes | to 0030: 30 minutes | 0015: 15 minutes |
| C9 | Air to Air intake temperature correction (Cool) | 0000: No shift 0002: -1.0°C | to 0001: -0.5°C 0007: -3.5°C | 0004: -2.0°C |
| CA | Air to Air intake temperature correction (Heat) | 0000: No shift 0002: 1.0°C | to 0001: 0.5°C 0007: 3.5°C | 0005: 2.5°C |
| D0 | Power saving mode | 0000: Invalid | 0001: Valid | 0001: Valid |
| EA | Current ventilation mode | 0002: Heat exchange mode | 0003: Automatic mode | 0002: Heat exchange mode |
| EB | Current ventilation fan speed | 0002: High 0004: Unbalanced | 0003: Low | 0002: High |
| ED | Operation output | 0000: Normal operation only 0002: Nighttime heat purge only 0004: Exhausting fan linked | 0001: Normal + Nighttime heat purge 0003: Supplying fan linked | 0000: Normal operation only |
| EE | Abnormal signal / Bypass mode signal switch | 0000: Abnormal signal output | 0001: Bypass signal output | 0000: Abnormal signal output |

1 Data display of system information (Displayed on the header outdoor unit only)

| SW01 | SW02 | SW03 | Display contents | | | | |
|-----------------|-------------------------------------|---|--|---|--------|----|-----|
| 1 | 1 | 3 | Refrigerant name | Displays refrigerant name. | | A | B |
| | | | | Model with refrigerant R410A | | r4 | 10A |
| | | | | Model with refrigerant R407C | | r4 | 07C |
| | 2 | System capacity | A | [5] to [48] :5 to 48HP | | | |
| | | | B | [HP] | | | |
| | 3 | No. of outdoor units | A | [1] to [4] :1 to 4 units | | | |
| | | | B | []P | | | |
| | 4 | No. of connected indoor units/No. of units with cooling thermo ON | A | [0] to [48] : 0 to 48 units (No. of connected units) | | | |
| | | | B | [C0] to [C48] : 0 to 48 units (No. of units with cooling thermo ON) | | | |
| | 5 | No. of connected indoor units/No. of units with heating thermo ON | A | [0] to [48] : 0 to 48 units (No. of connected units) | | | |
| | | | B | [H0] to [H48] :0 to 48 units (No. of units with heating thermo ON) | | | |
| | 6 | Compressor command correction amount | A | Data is displayed with hexadecimal notation | | | |
| | | | B | | | | |
| | 7 | Release control | A | Normal time: [r], During release control: [r] | | | |
| | | | B | — | | | |
| | 8 | Oil-equalization control | A | Normal time : [oiL-0] | | | |
| B | | | During oil equation : [oiL-1] | | | | |
| 9 | Oil-equalization request | A | Displays with segment LED lighting pattern | | | | |
| | | B |  <p>F in the left figure goes on: Header requests oil equalization. C in the left figure goes on: Follower requests oil-equalization. (Outdoor unit number)</p> | | | | |
| 10 | Refrigerant/oil recovery operation | A | During sending of cooling refrigerant oil recovery signal : [C1]. Normal time : [C] | | | | |
| | | B | During sending of heating refrigerant oil recovery signal : [H1] Normal time : [H]. | | | | |
| 11 | Automatic address | A | [Ad] | | | | |
| | | B | Automatic addressing : [FF], Normal time : [] | | | | |
| 12 | Demand operation | A | [dU] | | | | |
| | | B | Normal time : []. In 50% to 90% : [50 to 90] When controlling by communication line input : [E50 to E90] | | | | |
| 13 | Optional control (P.C. board input) | Displays optioned control status | | A | B | | |
| | | Operation mode selection : In heating with priority (Normal) | | h.* | *.*.* | | |
| | | Priority on cooling | | c.* | *.*.* | | |
| | | Heating only | | H.* | *.*.* | | |
| | | Cooling only | | C.* | *.*.* | | |
| | | Priority on No of operating indoor units. | | n.* | *.*.* | | |
| | | Priority on specific indoor unit | | U.* | *.*.* | | |
| | | Batch start/stop :Normal | | *.... | *.*.* | | |
| | | Start input | | *.1. | *.*.* | | |
| | | Stop input | | *.0. | *.*.* | | |
| | | Night low-noise operation : Normal | | *.* | *.*.* | | |
| | | Operation input | | *.* | ...*.* | | |
| | | Snow fan operation : Normal | | *.* | 1.*.* | | |
| Operation input | | *.* | *....* | | | | |
| 14 | Option control (BUS line input) | Same as above | | *.* | *.1.* | | |
| 15 | Unused | | | | | | |
| 16 | — | A | — | | | | |
| | | B | — | | | | |

* mark: Indicates none on display

2 Data display of outdoor unit information (Displayed on each outdoor unit)

| | | Display contents | | | | |
|----|---------------------------|--|--|--|---------|--|
| 1 | 1 | Error data | A | Displays outdoor unit number: [U1] to [U4] | | |
| | | | B | Displays check code (Latest code only is displayed.) There is no check code: [- - -] There is sub-code: Check code [* * *] for 3 seconds, sub-code [- * *] for 1 second alternately | | |
| | | | | <SW04> push function : Fan of unit with error only drives. 7-segment A: [E1] <SW04 + SW05> push function : Fan of normal unit only drives. 7-segment A: [E0] <SW05> push function : Interruption of fan operation function | | |
| | 2 | — | A | — | | |
| | | | B | — | | |
| | 3 | Operation mode | A | Stop: [] Normal cooling: [C], Normal heating: [H], Normal defrost: [J] | | |
| | | | B | — | | |
| | 4 | Outdoor unit HP | A | 5HP: [5], 6HP: [6], 8HP: [8], 10HP: [10], 12HP: [12] | | |
| | | | B | [HP] | | |
| | 5 | Compressor operation command | A | No.1 compressor operation command is displayed. Data display with Hexadecimal notation: [00 to FF] | | |
| | | | B | No.2 compressor operation command is displayed. Data display with Hexadecimal notation: [00 to FF] | | |
| | | | | <SW04> push function : Inverter frequency is exchanged to decimal notation. 7-segment display (A/B) : [* * *] [* * H] (Normal display by pushing <SW05>) | | |
| | 6 | Outdoor fan step | A | [FP] | | |
| | | | B | Step 0 to 31: [0 to 31] | | |
| | 7 | Compressor backup | A | Displays No.1 compressor setup status Normal: [], Backup setup: [C1] | | |
| | | | B | Displays No.2 compressor setup status Normal: [], Backup setup: [C2] | | |
| 8 | — | A | — | | | |
| | | B | — | | | |
| 9 | Control valve output data | Displays control output status of solenoid valve | | A | B | |
| | | 4-way valve: ON | | H. 1 | ... .. |  |
| | | 4-way valve: OFF | | H. 0 | ... .. |  |
| 10 | — | SV2: ON / SV5: OFF | | 2. 1 | ... 5.0 | |
| | | SV2: OFF / SV5: ON | | 2.0 | ... 5.1 | |
| 11 | — | SV3A: ON / SV3B: OFF / SV3C: OFF /SV3D: OFF | | 3.1 | 0 0 0 | |
| | | SV3A: OFF / SV3B: ON / SV3C: OFF /SV3D: OFF | | 3.0 | 1 0 0 | |
| | | SV3A: OFF / SV3B: OFF / SV3C: ON /SV3D: OFF | | 3.0 | 0 1 0 | |
| | | SV3A: OFF / SV3B: OFF / SV3C: OFF /SV3D: ON | | 3.0 | 0 0 1 | |
| 12 | — | SV41: ON / SV42: OFF | | 4. ... | 1 0 ... | |
| | | SV41: OFF / SV42: ON | | 4. ... | 0 1 ... | |
| 13 | — | — |  | ... .. | ... .. |  |
| | | — | | | | |
| 14 | PMV1 /PMV2 opening | Displays opening data (Decimal) (Total opening) | | ** | ** .P | |
| 15 | — | | | ... * | ** .P | |
| 16 | Oil level judgment status | A | [oL] <SW05> push SW function: The following data is displayed for 2 seconds. During oil shortage in compressor 1: [L...], during oil shortage in compressor 2: [... L] | | | |
| | | B | Initial display: [... ..], Oil level judgment result: [A. #. *] Judgment result of compressor 1 in [#], compressor 2 in [] (0: Normal, 1, 2: Shortage) is displayed. | | | |

3 Data display of outdoor cycle (Displayed on each outdoor unit)

<SMMS>

| SW01 | SW02 | SW03 | SW01 | | | | | |
|------|-----------------|------|------------------|---|--|--------|-------|-------|
| 1 | 1 | 2 | Pd pressure data | (MPaG: Approx. 1/10 value of kg/cm ² G data) | A | B | | |
| | | | | | P d. | *.*.* | | |
| | | | 2 | Pd pressure data | Ps pressure (MPaG) is displayed with decimal data. | P S. | *.*.* | |
| | | | 3 | PL pressure conversion data | Estimated pressure of liquid line (MPaG) is displayed with decimal data. | P L. | *.*.* | |
| | | | 4 | TD1 sensor data | Temperature sensor data (°C) is displayed with decimal notation. | Symbol | t d | 1 |
| | | | | | | Data | * | *.*.* |
| | | | 5 | TD2 sensor data | • Symbol display for 1 sec. and data display for 3 sec. are alternately displayed. | Symbol | t d | 2 |
| | | | | | | Data | * | *.*.* |
| | | | 6 | TS sensor data | • Data is displayed in [*]. Negative data is displayed as [- * * * *]. | Symbol | t S | |
| | | | | | | Data | * | *.*.* |
| | | | 7 | TE sensor data | | Symbol | t E | |
| | | | | | | Data | * | *.*.* |
| | | | 8 | | | Symbol | — | — |
| | | | | | | Data | — | — |
| 9 | TL sensor data | | Symbol | t L | | | | |
| | | | Data | * | *.*.* | | | |
| 10 | TO sensor data | | Symbol | t o | | | | |
| | | | Data | * | *.*.* | | | |
| 11 | TK1 sensor data | | Symbol | F1 | | | | |
| | | | Data | * | *.*.* | | | |
| 12 | TK2 sensor data | | Symbol | F2 | | | | |
| | | | Data | * | *.*.* | | | |
| 13 | TK3 sensor data | | Symbol | F3 | | | | |
| | | | Data | * | *.*.* | | | |
| 14 | TK4 sensor data | | Symbol | F4 | | | | |
| | | | Data | * | *.*.* | | | |

<SHRM>

| SW01 | SW02 | SW03 | SW01 | | | | | |
|------|-----------------|------|------------------|---|--|--------|-------|-------|
| 1 | 1 | 2 | Pd pressure data | Ps pressure (MPaG) is displayed with decimal data. (MPaG: Approx. 1/10 value of kg/cm ² G data) | A | B | | |
| | | | | | P d. | *.*.* | | |
| | | | 2 | Pd pressure data | Ps pressure (MPaG) is displayed with decimal data. | P S. | *.*.* | |
| | | | 3 | PL pressure conversion data | Estimated pressure of liquid line (MPaG) is displayed with decimal data. | P L. | *.*.* | |
| | | | 4 | TD1 sensor data | Temperature sensor data (°C) is displayed with decimal notation. | Symbol | t d | 1 |
| | | | | | | Data | * | *.*.* |
| | | | 5 | TD2 sensor data | • Symbol display for 1 sec. and data display for 3 sec. are alternately displayed. | Symbol | t d | 2 |
| | | | | | | Data | * | *.*.* |
| | | | 6 | TS1 sensor data | • Data is displayed in [*]. | Symbol | t S | 1 |
| | | | | | | Data | * | *.*.* |
| | | | 7 | TS2 sensor data | • Negative data is displayed as [- * * * *]. | Symbol | t S | 2 |
| | | | | | | Data | * | *.*.* |
| | | | 8 | TE sensor data | | Symbol | t E | — |
| | | | | | | Data | — | — |
| 9 | TL sensor data | | Symbol | t L | | | | |
| | | | Data | * | *.*.* | | | |
| 10 | TO sensor data | | Symbol | t o | | | | |
| | | | Data | * | *.*.* | | | |
| 11 | TK1 sensor data | | Symbol | F1 | | | | |
| | | | Data | * | *.*.* | | | |
| 12 | TK2 sensor data | | Symbol | F2 | | | | |
| | | | Data | * | *.*.* | | | |
| 13 | TK3 sensor data | | Symbol | F3 | | | | |
| | | | Data | * | *.*.* | | | |
| 14 | TK4 sensor data | | Symbol | F4 | | | | |
| | | | Data | * | *.*.* | | | |

4 Data display of outdoor cycle (Displayed on the header unit)

* This method is used when information of the follower unit is displayed on 7-segment display of the header unit.

<SMMS Only>

| | | | Display contents | | |
|---|---|--------|------------------------------|---|---|
| 3 | 1 | 1 to 3 | Error data | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | Check code is displayed. (Latest check code only) No check code: [- - -] |
| | 2 | | Installed compressor type | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | |
| | 3 | | Outdoor unit capacity | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | 8HP: [... .. 8]. 10HP: [... 1 0], 5 to 12HP |
| | 4 | | Compressor operation command | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | No.1 compressor ON: [C10], No.2 compressor ON: [C01] For unconnected compressor, - is displayed. |
| | 5 | | Fan operation mode | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | Stop time: [F ... 0], Mode 31: [F 3 1] |
| | 6 | | Release signal | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | Normal time: [r], Release received: [r ... 1] |
| | 7 | | Oil level judgment | A | [U.*] * : SW03 setup number + 1 number (Outdoor unit number U2 to U4) |
| | | | | B | Normal time: [... ..], Oil shortage: [... .. L] |

NOTE) The follower unit is setup by changing SW03.

| SW03 | 1 | 2 | 3 |
|---------------------|----|----|----|
| 7-segment display A | U2 | U3 | U4 |

5 Data display of indoor unit information (Displayed on the header unit only)

| SW01 | SW02 | SW03 | Display contents | |
|------|---------|--------|--|--|
| 4 | 1 to 16 | 1 to 3 | Receiving status of indoor BUS communication | B Receiving time: [... .. 1], Not received: [... ..] |
| 5 | | | Indoor check code | B No check code: [- - -] |
| 6 | | | Indoor capacity (HP) horse power | B 0. 2, 0. 5, 0. 8, ... 1, 1. 2, 1. 7, ... 2, 2. 5, ... 3, 3. 2, ... 4, ... 5, ... 6, ... 8, 1 0, 1 6, 2 0 |
| 7 | | | Indoor request command (S code) | B Data is displayed with Hexadecimal notation [... .. 0 to F] : Heating |
| 8 | | | Indoor PMV opening data | B Data is displayed with Hexadecimal notation |
| 9 | | | Indoor TA sensor data | B Data is displayed with Hexadecimal notation |
| 10 | | | Indoor TF sensor data | B Data is displayed with Hexadecimal notation |
| 11 | | | Indoor TCJ sensor data | B Data is displayed with Hexadecimal notation |
| 12 | | | Indoor TC1 sensor data | B Data is displayed with Hexadecimal notation |
| 13 | | | Indoor TC2 sensor data | B Data is displayed with Hexadecimal notation |

NOTE) Indoor address No. is chosen by changing SW02 and SW03.

| SW03 | SW02 | Indoor address | 7-segment display A |
|------|---------|------------------------|---------------------|
| 1 | 1 to 16 | SW02 setup number | [01] to [16] |
| 2 | 1 to 16 | SW02 setup number + 16 | [17] to [32] |
| 3 | 1 to 16 | SW02 setup number + 32 | [33] to [48] |

6 Outdoor EEPROM write-in error code display (Displayed on the header unit only)

The latest error code written in EEPROM of each outdoor unit is displayed.

(It is used when confirming the error code after power supply has been reset.)

Set SW01 to 03 as shown in the following table, and the push SW04 for 5 seconds or more to display an error code.

| SW01 | SW02 | SW03 | Display contents | 7-segment display | |
|------|------|------|---|-------------------|--------|
| | | | | A | B |
| 1 | 1 | 16 | The latest error code of the header unit 1 (U1) | E. r | 1. - - |
| | 2 | | The latest error code of the follower unit 1 (U2) | E. r | 2. - - |
| | 3 | | The latest error code of the follower unit 2 (U3) | E. r | 3. - - |
| | 4 | | The latest error code of the follower unit 3 (U4) | E. r | 4. - - |

7 Service support function list

| SW01 | SW02 | SW03 | 7-segment display [A] | Function contents | |
|------|---------|--------|-----------------------|---|--|
| 2 | 1 | 1 | [J C] | Refrigerant circuit and control communication line check function (Cooling operation) | |
| | | | [J H] | Refrigerant circuit and control communication line check function (Heating operation) | |
| | | | [P] | Indoor PMV forced full open function | |
| | | | [A 1] | Indoor remote controller discriminating function | |
| | | | [C] | Cooling test operation function | |
| | | | [H] | Heating test operation function | |
| | | | [C H] | Indoor collective start/stop (ON/OFF) function | |
| | | | [r d] | Outdoor refrigerant recovery operation function (Pump down function) | |
| | | | [E r] | Error clear function | |
| 2 | | 3 | [H r] | Solenoid valve forced open/close function | |
| 2 | 1 to 16 | 4 to 5 | [F d] | Fan forced operation function | |
| 2 | | 15 | [t o] | Outside temp sensor manual adjustment function | |
| 16 | 1 to 16 | 1 | [0 1] to [1 6] | Indoor No. 1 to 16 unit | Indoor individual start/stop (ON/OFF) function |
| | 2 | | [1 7] to [3 2] | Indoor No.17 to 32 unit | |
| | 3 | | [3 3] to [4 8] | Indoor No.33 to 48 unit | |
| | 4 | | [4 9] to [6 4] | Indoor No.49 to 64 unit | |

<SMMS only>

| SW01 | SW02 | SW03 | 7-segment display [A/B] | Function contents |
|------|------|------|-------------------------|---|
| 1 | 1 | 1 | [U 1] [E28] | Follower unit error / Corresponding unit fan operation function |

8 Data display of indoor unit information (Displayed on the header unit only)

| SW01 | SW02 | SW03 | Display contents | | |
|------|---------|--------|--|---|--|
| 4 | 1 to 16 | 1 to 3 | Receiving status of indoor BUS communication | B | Receiving time: [... .. 1], Not received: [... ..] |
| 5 | | | Indoor check code | B | No check code: [- - -] |
| 6 | | | Indoor capacity (HP) horse power | B | 0. 2, 0. 5, 0. 8, ... 1, 1. 2, 1. 7, ... 2, 2. 5, ... 3, 3. 2, ... 4, ... 5, ... 6, ... 8, 1 0, 1 6, 2 0 |
| 7 | | | Indoor request command (S code) | B | Data is displayed with Hexadecimal notation [... .. 0 to F] : Heating |
| 8 | | | Indoor PMV opening data | B | Data is displayed with Hexadecimal notation |
| 9 | | | Indoor TA sensor data | B | Data is displayed with Hexadecimal notation |
| 10 | | | Indoor TF sensor data | B | Data is displayed with Hexadecimal notation |
| 11 | | | Indoor TCJ sensor data | B | Data is displayed with Hexadecimal notation |
| 12 | | | Indoor TC1 sensor data | B | Data is displayed with Hexadecimal notation |
| 13 | | | Indoor TC2 sensor data | B | Data is displayed with Hexadecimal notation |

<SHRM only>

Note) Indoor address No. is chosen by changing SW02 and SW03.

| SW03 | SW02 | Indoor address | 7-segment display A |
|------|---------|------------------------|---------------------|
| 1 | 1 to 16 | SW02 setup number | [01] to [16] |
| 2 | 1 to 16 | SW02 setup number + 16 | [17] to [32] |
| 3 | 1 to 16 | SW02 setup number + 32 | [33] to [48] |

8 Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function in Outdoor Unit

This function is provided to forcedly open or close fully P.M.V. (PMV1/PMV2) used in the outdoor unit for 2 minutes.

[Open fully]

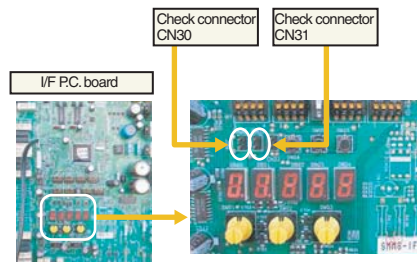
Short-circuit for CN30 on the outdoor interface P.C. board.

[Close fully]

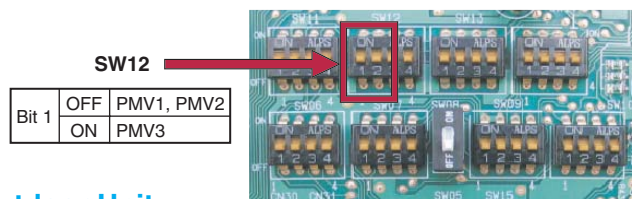
Short-circuit for CN31 on the outdoor interface P.C. board.

[Clear]

After 2 minutes, the opening returns to the normal opening. Be sure to remove the short-circuited (as short pin, etc.) after confirmation.



<Enlarged diagram of switch position>



[Operating method] <SHRM only>

Select one of PMV1 or PMV2 to open. Turn SW12 bit 1 to OFF when handling (PMV1/PMV2), and turn it to ON when selecting PMV3.

9 Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcedly open each solenoid valve mounted in the outdoor unit by the switch operation on the interface P.C. board in the outdoor unit to using this function, check there is no refrigerant clogging with ON/OFF operation of the solenoid valve.

Operation

1. Set the switch on the interface P.C. board SW01 to [2], SW02 to [1], SW03 to [3].
2. When [H.] is displayed in 7-segment display [A], keep pushing the switch SW04 for 2 seconds or more.
3. From when [2] is displayed in 7-segment display [B], SV2 is turned on.
4. After then, ON and OFF of each solenoid valve are exchanged by changing the setup number of the switch SW02. (ON/OFF output pattern of each solenoid valve is as below.)

NOTE 1) Display in 7-segment display [B] is exchanged just when the number of SW02 has been changed, on the other hand, the solenoid valve output is exchanged when SW02 has kept with the same number for 5 seconds or more.

NOTE 2) The mark [○] in the table indicates the corresponding solenoid valve is forcedly turned on.

NOTE 3) The mark [-] in the table indicates ON/OFF of the solenoid valve is controlled based upon the specifications of the air conditioner.

NOTE 4) The mark [●] in the table indicates the corresponding solenoid valve is forcedly turned off with this operation.

NOTE 5) The case heater outputs heat air for both compressor and accumulator heaters.

[Clear] Return numbers of SW01, SW02, and SW03 on the interface P.C. board to [1/1/1] each.

| SW02 | 7-segment display [B] | Operation pattern of solenoid valve | | | | | | | | | Case heater output relay |
|----------|-----------------------|-------------------------------------|-----|------|------|------|------|------|------|------|--------------------------|
| | | SV2 | SV5 | SV41 | SV42 | SV3A | SV3B | SV3C | SV3D | SV3E | |
| 1 | [2] | ○ | — | — | — | — | — | — | — | ○ | ○ |
| 2 | [5] | — | ○ | — | — | — | — | — | — | ○ | ○ |
| 3 | [4-] | — | — | ○ | ○ | — | — | — | — | ○ | ○ |
| 4 | [3A] | — | — | — | — | ○ | — | — | — | ○ | ○ |
| 5 | [3b] | — | — | — | — | — | ○ | — | — | ○ | ○ |
| 6 | [3C] | — | — | — | — | — | — | ○ | — | ○ | ○ |
| 7 | [3d] | — | — | — | — | — | — | — | ○ | ○ | ○ |
| 8 | [3E] | — | — | — | — | — | — | — | — | ● | ○ |
| 9 | [3D] | — | — | — | — | ○ | ○ | ○ | — | — | ○ |
| 10 to 15 | [] | — | — | — | — | — | — | — | — | ○ | ○ |
| 16 | [ALL] | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

NOTE) As this function is not based on the specified general control, be sure to release this mode after operation.

Abnormal Outdoor Unit Discrimination Method <By Fan Operating Function>

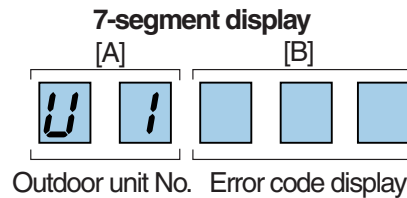
This function is provided to forcedly operate the fan of the outdoor unit in which an error occurred or the fan of the normal outdoor unit by the switch operation on the interface P.C. board in the header unit.

To specify which one of the follower units connected to the system was faulty, use this function for the system stop due to a follower unit fault (Check code [E28]).

Operation

<In case to operate the fan in the erroneous outdoor unit only>

1. Check all the switches, **SW01**, **SW02**, and **SW03** on the interface P.C. board in the header unit are set to [1].



2. Push the push-switch **SW04** for 2 seconds or more.
3. "E 1" is displayed on 7-segment display [A].
4. The fan of the outdoor unit in which error occurred starts operation within approx. 10 seconds when "E 1" was displayed.

<In case to operate the fans in all the normal outdoor units>

1. Check all the switches, **SW01**, **SW02**, and **SW03** on the interface P.C. board are set to [1/1/1].
2. Push the push-switches **SW04** and **SW05** at the same time for 2 seconds or more.
3. "E 0" is displayed on 7-segment display [A].
4. The fans of all the normal outdoor units start operation with the Max. fan speed within approx. 10 seconds when "E 0" was displayed.

[Release]

Push the push-switch **SW05** on the interface P.C. board in the header unit for 2 seconds or more.

The outdoor fan which was operated stops.

* Check [U. 1] is displayed on 7-segment display [A], and then finish the work.

Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to open or close forcedly **PMV** for 2 minutes in all the indoor units by the switch operation on the interface P.C. board of the header unit.

This function is also used to open PMV fully when turning off the power and executing an operation.

Operation

[Open fully]

Set the switch **SW01** on the interface P.C. board of the header unit to [2], **SW02** to [3], **SW03** to [1], and push **SW04** for 2 seconds or more. (Display appears on 7-segment display for 2 minutes as follows.) [P] [FF]

[Close fully]

Set the switch on the interface P.C. board of the header unit **SW01** to [2], **SW02** to [3], **SW03** to [1], and push **SW05** for 2 seconds or more. (Display appears on 7-segment display for one minute as follows.) [P] [00]

[Clear]

After 2 minutes (1 minutes for "Close fully") passed when setup has finished, the opening automatically returns to the normal opening.

2 Data display of system information

| | SW02 | SW03 | Display contents | | | | |
|-----------------|-------------------------------------|---|---|---|-----------|----|-----|
| 1 | 1 | 3 | Refrigerant name | Displays refrigerant name. | | A | B |
| | | | | Model with refrigerant R410A | | r4 | 10A |
| | | | | Model with refrigerant R407C | | r4 | 07C |
| | 2 | System capacity | A | [4] to [6] : 4 to 6HP | | | |
| | | | B | [HP] | | | |
| | 3 | Total capacity of indoot units | A | [i. * *. * *] | | | |
| | | | B | | | | |
| | 4 | No. of connected indoor units/ No. of units with cooling thermo ON | A | [0] to [10] : 0 to 10 units (No. of connected units) | | | |
| | | | B | [C0] to [C10] : 0 to 10 units (No. of units with cooling thermo ON) | | | |
| | 5 | No. of connected indoor units/ No. of units with heating thermo ON | A | [0] to [10] : 0 to 10 units (No. of connected units) | | | |
| | | | B | [H0] to [H10] : 0 to 10 units (No. of units with heating thermo ON) | | | |
| | 6 | Compressor command correction amount | A | Data is displayed with hexadecimal notation | | | |
| | | | B | | | | |
| 7 | Release control | A | Normal time : [r], During release control: [r1] | | | | |
| | | B | — | | | | |
| 8 | — | A | — | | | | |
| | | B | — | | | | |
| 9 | — | A | — | | | | |
| | | B | | | | | |
| 10 | Refrigerant/oil recovery operation | A | During sending of cooling refrigerant oil recovery signal : [C1]. Normal time : [C] | | | | |
| | | B | During sending of heating refrigerant oil recovery signal : [H1]. Normal time : [H] | | | | |
| 11 | Automatic address | A | [Ad] | | | | |
| | | B | Automatic addressing : [FF], Normal time : [] | | | | |
| 12 | Demand operation | A | [dU] | | | | |
| | | B | Normal time : []. In 50% to 90% : [50 to 90] When controlling by communication line input : [E50 to E90] | | | | |
| 13 | Optional control (P.C. board input) | Displays optioned control status | | A | B | | |
| | | Operation mode selection : In heating with priority (Normal) | | -.* | *.*.*. | | |
| | | Priority on cooling | | c.* | *.*.*. | | |
| | | Heating only | | H.* | *.*.*. | | |
| | | Cooling only | | C.* | *.*.*. | | |
| | | Priority on No. of operating indoor units | | n.* | *.*.*. | | |
| | | Priority on specific indoor unit | | U.* | *.*.*. | | |
| | | External master ON/OFF control | | *.... | *.*.*. | | |
| | | Start input | | *.1. | *.*.*. | | |
| | | Stop input | | *.0. | *.*.*. | | |
| | | Night operation (Sound reduction) : Normal | | *.*. |*.*. | | |
| | | Operation input | | *.*. | 1.*.*. | | |
| | | Snow fan operation : Normal | | *.*. | *....*.*. | | |
| Operation input | | *.*. | *.1.*.*. | | | | |
| 14 | Option control (BUS line input) | Same as above | | | | | |
| 15 | Unused | | | | | | |
| 16 | — | A | — | | | | |
| | | B | — | | | | |

* mark: Indicates none on display

3 Data display of outdoor unit information

| | SW02 | SW03 | Display contents | | | | |
|----|------|------|------------------------------|--|--|--------|--------|
| 1 | 1 | 1 | Error data | A | Displays outdoor unit number: [U1] to [U4] | | |
| | | | | B | Displays check code (Latest code only is displayed.) There is no check code: [- - -] There is sub-code: Check code [* * *] for 3 seconds sub-code [- * *] for 1 second alternately | | |
| | | | | | <SW04> push function : Fan of unit with error only drives. 7-segment A: [E1] <SW04 + SW05> push function : Fan of normal unit only drives. 7-segment A: [E0] <SW05> push function : Interruption of fan operation function | | |
| 2 | | | — | A | — | | |
| | | | | B | — | | |
| 3 | | | Operation mode | A | Stop: [] Normal cooling: [C], Normal heating: [H], Normal defrost: [J] | | |
| | | | | B | — | | |
| 4 | | | Outdoor unit HP | A | 4HP: [4], 5HP: [5], 6HP: [6] | | |
| | | | | B | [HP] | | |
| 5 | | | Compressor operation command | A | Compressor operation command is displayed. Data display with Hexadecimal notation: [00 to FF] | | |
| | | | | B | [* * * * * * * *] | | |
| | | | | | <SW04> push function : Inverter frequency is exchanged to decimal notation. 7-segment display (A/B) : [* *] [* * H] (Normal display by pushing <SW05>) | | |
| 6 | | | Outdoor fan step | A | [FP] | | |
| | | | | B | Step 0 to 31: [0 to 31] | | |
| 7 | | | — | A | — | | |
| | | | | B | — | | |
| 8 | | | — | A | — | | |
| | | | | B | — | | |
| 9 | | | Control valve output data | Displays control output status of solenoid valve | | A | B |
| | | | | 4-way valve: ON | | H. 1 | |
| | | | | 4-way valve: OFF | | H. 0 | |
| 10 | | | | SV2: ON / SV5: OFF | | 2. 1 | 5. 0 |
| | | | | SV2: OFF / SV5: ON | | 2. 0 | 5. 1 |
| 11 | | | | SV41: ON / SV42: OFF | | 4. 1 | |
| | | | | SV41: OFF / SV42: ON | | 4. 0 | |
| 12 | | | | — | | | |
| 13 | | | | — | | | |
| 14 | | | PMV opening | Displays opening data (Decimal) (Total opening) | | * * | * *, P |
| 15 | | | — | — | | | |
| 16 | | | — | A | — | | |
| | | | | B | — | | |

4 Data display of outdoor cycle

| | SW02 | SW03 | Display contents | | | | | |
|----|------|------|------------------|---|--|--------|-------|-------|
| 1 | 1 | 2 | Pd pressure data | Pd pressure (MPaG) is displayed with decimal data. (MPaG: Approx. 1/10 value of kg/cm ² G data) | | A | B | |
| | | | | P d. | *.*.* | | | |
| | | | 2 | Ps pressure data | Ps pressure (MPaG) is displayed with decimal data. | | P S. | *.*.* |
| | | | 3 | PL pressure conversion data | Estimated pressure of liquid line (MPaG) is displayed with decimal data. | | P L. | *.*.* |
| | | | 4 | TD sensor data | Temperature sensor data (°C) is displayed with decimal notation. | Symbol | t d | |
| | | | | | | Data | *.*.* | |
| | | | 5 | TS sensor data | • Symbol display for 1 sec. and data display for 3 sec. are alternately displayed. | Symbol | t S | |
| | | | | | | Data | *.*.* | |
| | | | 6 | TE sensor data | • Data is displayed in [*]. Negative data is displayed as [... * * * *]. | Symbol | t E | |
| | | | | | | Data | *.*.* | |
| | | | 7 | TL sensor data | | Symbol | t L | |
| | | | | | | Data | *.*.* | |
| | | | 8 | TO sensor data | | Symbol | t O | — |
| | | | | | | Data | — | — |
| | | | 9 | — | | Symbol | | |
| | | | | | | Data | *.*.* | |
| 10 | — | | Symbol | | | | | |
| | | | Data | *.*.* | | | | |
| 11 | — | | Symbol | | | | | |
| | | | Data | *.*.* | | | | |
| 12 | — | | Symbol | | | | | |
| | | | Data | *.*.* | | | | |
| 13 | — | | Symbol | | | | | |
| | | | Data | *.*.* | | | | |
| 14 | — | | Symbol | | | | | |
| | | | Data | *.*.* | | | | |
| 15 | — | A | | — | | | | |
| | | | B | — | | | | |
| 16 | — | A | | — | | | | |
| | | | B | — | | | | |

5 Data display of indoor unit information

| SW01 | SW02 | SW03 | Display contents | | | |
|------|---------|--------|--|---|--|--|
| 4 | 1 to 16 | 1 to 3 | Receiving status of indoor BUS communication | B | Receiving time: [... .. 1], Not received: [... ..] | |
| 5 | | | Indoor check code | B | No check code: [... ..] | |
| 6 | | | Indoor capacity (HP) horse power | B | 0.2, 0.5, 0.8, ... 1, 1.2, 1.7, ... 2, 2.5, ... 3, 3.2, ... 4, ... 5, ... 6, ... 8, 10, 16, 20 | |
| 7 | | | Indoor request command (S code) | B | Data is displayed with Hexadecimal notation [... .. 0 to F] : Heating | |
| 8 | | | Indoor PMV opening data | B | Data is displayed with Decimal notation | |
| 9 | | | Indoor TA sensor data | B | Data is displayed with Decimal notation | |
| 10 | | | Indoor TF sensor data | B | Data is displayed with Decimal notation | |
| 11 | | | Indoor TCJ sensor data | B | Data is displayed with Decimal notation | |
| 12 | | | Indoor TC1 sensor data | B | Data is displayed with Decimal notation | |
| 13 | | | Indoor TC2 sensor data | B | Data is displayed with Decimal notation | |

NOTE) Indoor address No. is chosen by changing SW02 and SW03.

| SW03 | SW02 | Indoor address | 7-segment display A |
|------|---------|------------------------|---------------------|
| 1 | 1 to 16 | SW02 setup number | [01] to [16] |
| 2 | 1 to 16 | SW02 setup number + 16 | [17] to [32] |
| 3 | 1 to 16 | SW02 setup number + 32 | [33] to [48] |

6 Outdoor EEPROM check code display

* The latest check code written in **EEPROM** on each outdoor unit is displayed.

(It is used when confirming the check code after power supply has been reset.)

Set **SW01** to **SW03** as shown in the following table and the push **SW04** for 5 seconds or more to display an check code.

| | | | Display contents | 7-segment display | |
|---|---|----|--|-------------------|-------|
| | | | | A | B |
| 1 | 1 | 16 | The latest check code of the outdoor unit 1 (U1) | E. r | 1. -- |

7 Service support function list

| SW01 | SW02 | SW03 | 7-segment display [A] | Function contents | |
|------|---------|--------|-----------------------|---|--|
| 2 | 1 | 1 | [J C] | Refrigerant circuit and control communication line check function (Cooling operation) | |
| | 2 | | [J H] | Refrigerant circuit and control communication line check function (Heating operation) | |
| | 3 | | [P] | Indoor PMV forced full open function | |
| | 4 | | [A 1] | Indoor remote controller discriminating function | |
| | 5 | | [C] | Cooling test operation function | |
| | 6 | | [H] | Heating test operation function | |
| | 7 | | [C H] | Indoor collective start/stop (ON/OFF) function | |
| | 16 | | [E r] | Error clear function | |
| 2 | 1 to 16 | 3 | [H r] | Solenoid valve forced open/close function | |
| | | 4 to 5 | [F d] | Fan forced operation function | |
| | | 15 | [t o] | Outside temp sensor manual adjustment function | |
| 16 | 1 to 9 | 1 | [01] to [16] | Indoor No. 1 to 9 unit | Indoor individual start/stop (ON/OFF) function |

8 Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to fully open or close forcibly the **PMV** for 2 minutes in all indoor units, using the switch operation on the interface P.C. board of the outdoor unit.

This function is also used to open the PMV fully when turning off the power and executing an operation, for example, vacuuming.

Operation

[Open fully]

Set the switch **SW01** on the interface P.C. board of the outdoor unit to [2], **SW02** to [3], **SW03** to [1] and push **SW04** for 2 seconds or more. (Display shown on 7-segment display for 2 minutes as follows.) [P] [FF]

[Close fully]

Set the switch on the interface P.C. board of the outdoor unit **SW01** to [2], **SW02** to [3], **SW03** to [1] and push **SW05** for 2 seconds or more. (Display shown on 7-segment display for one minute as follows.) [P] [00]

[Clear]

After 2 minutes (1 minutes for "Close fully") have passed when setup has finished, the PMV automatically returns to the normal operation.

9 Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function in Outdoor Unit

This function is provided to fully open or close fully the **PMV** used in the outdoor unit for 2 minutes.

[Open fully]

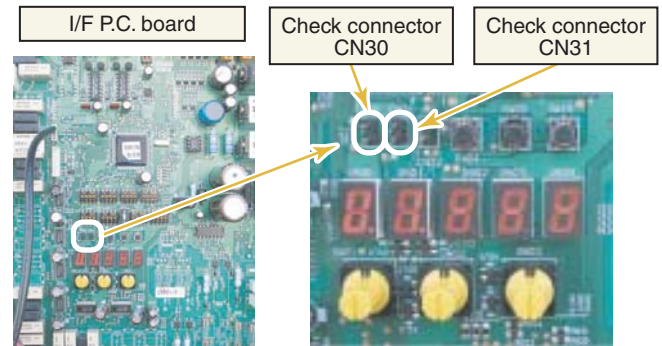
Short-circuit CN30 on the interface P.C. board of the outdoor unit.

[Close fully]

Short-circuit CN31 on the interface P.C. board of the outdoor unit.

[Clear]

After 2 minutes, the opening returns to the normal operation.



Be sure to remove the short circuit after confirmation.

10 Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcibly open/close each solenoid valve mounted in the outdoor unit by use of the switches provided on the outdoor unit interface P.C. board. This function confirms the operation of each solenoid valve.

Operation

1. On the interface P.C. board set **SW01** to [2], **SW02** to [1] and **SW03** to [3].
2. Confirm [H,] is displayed on the 7-segment display [B]. Push switch **SW04** for 2 seconds or more.
3. Confirm [2] is displayed on the 7-segment display - this indicates that solenoid **SV2** has been switched on.
4. Each solenoid can be operated by selecting the appropriate **SW02** position as shown in the table below. (ON/OFF output pattern of each solenoid valve is as below.)

Note 1) Be aware that there is a 5 second delay in the operation of the selected solenoid valve after **SW02** has been set.

Note 2) The mark [○] in the table indicates the selected solenoid valve is forced on.

Note 3) The mark [—] in the table indicates the selected solenoid mode will depend on the specifications of the air conditioner.

Note 4) The mark [×] in the table indicates the selected solenoid valve has been turned off.

Note 5) The case heater relay output operates both compressor and accumulator heaters.

| SW01 | SW02 | SW03 | 7-segment display[B] | Operation pattern of solenoid valve | | | Compressor and accumulator heater |
|------|------|------|----------------------|-------------------------------------|-----|-----|-----------------------------------|
| | | | | SV2 | SV4 | SV5 | |
| 2 | 1 | 3 | [2] | × | — | — | ○ |
| | 2 | | [4] | — | ○ | — | ○ |
| | 3 | | [5] | — | — | ○ | ○ |
| | 15 | | [OFF] | × | × | × | × |
| | 16 | | [ALL] | ○ | ○ | ○ | ○ |

[Clear]

Return settings on **SW01**, **SW02**, and **SW03** to (1/1/1) on the Interface P.C. board.

Note) Ensure this function is cleared to return the air conditioner to normal operation.

11 Fan Operation Check in Outdoor Unit

This function is provided to check the fan operation on the interface P.C. board in the outdoor unit. The frequency of the fan speed can be controlled.

Therefore utilize this function to check the operation or abnormal sound in the fan system.

Note) Do not use this function during operation of the compressor. It may damage the compressor.

Operation

1. Set the switch on the interface P.C. board of the outdoor unit **SW01** to [2], **SW02** to [1], **SW03** to [4].
2. When [F. d] is displayed in 7-segment display [A], keep pushing the switch **SW04** for 2 seconds or more.
3. From when fan step [31] is displayed in 7-segment display [B], the fan starts operation. (Max. step operation)
4. After then, 7-segment display [B] and the fan step are changed by changing the setup number of the switches **SW02** and **SW03**. (Output pattern of the fan is as follows.)

| | SW02 | SW03 | 7-segment display [B] | Fan step |
|---|------|------|-----------------------|----------|
| 2 | 1 | 4 | [31] | 31 |
| | 2 | | [30] | 30 |
| | 3 | | [29] | 29 |
| | 4 | | [28] | 28 |
| | 5 | | [27] | 27 |
| | 6 | | [26] | 26 |
| | 7 | | [25] | 25 |
| | 8 | | [24] | 24 |
| | 9 | | [23] | 23 |
| | 10 | | [22] | 22 |
| | 11 | | [21] | 21 |
| | 12 | | [20] | 20 |
| | 13 | | [19] | 19 |
| | 14 | | [18] | 18 |
| | 15 | | [17] | 17 |
| | 16 | | [16] | 16 |

| | SW01 | SW02 | SW03 | 7-segment display [B] | Fan step |
|---|------|------|------|-----------------------|----------|
| 2 | 2 | 1 | 5 | [15] | 15 |
| | | 2 | | [14] | 14 |
| | | 3 | | [13] | 13 |
| | | 4 | | [12] | 12 |
| | | 5 | | [11] | 11 |
| | | 6 | | [10] | 10 |
| | | 7 | | [9] | 9 |
| | | 8 | | [8] | 8 |
| | | 9 | | [7] | 7 |
| | | 10 | | [6] | 6 |
| | | 11 | | [5] | 5 |
| | | 12 | | [4] | 4 |
| | | 13 | | [3] | 3 |
| | | 14 | | [2] | 2 |
| | | 15 | | [1] | 1 |
| | | 16 | | [0] | 0 |

[Clear]

This function is cleared by one of the following operations.

1. When **SW01** setting number was changed to other number.
2. Push-switch **SW05** was pushed for 2 seconds or more.

1 Display of System Information (Displayed on Header Outdoor Unit Only)

| SW01 | SW02 | SW03 | Display detail | | | | | | |
|------|-------------------------------------|--|--|---|-----------------|---|---|--|--|
| 1 | 3 | 3 | Unused | | | A | B | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | 2 | System capacity | A | [...8]~[48]:8 to 48 HP | | | |
| | | | | | B | [HP] | | | |
| | | | 3 | No. of outdoor units | A | [...1]~[...4]:1 to 4 | | | |
| | | | | | B | [...P] | | | |
| | | | 4 | No. of indoor units connected/ No. of units with cooling thermo ON | A | [...0.]~[48.]:0 to 48 (No. of units connected) | | | |
| | | | | | B | [C...0]~[C48]:0 to 48 (No. of units with cooling thermo ON) | | | |
| | | | 5 | No. of indoor units connected/ No. of units with heating thermo ON | A | [...0.]~[48.]:0 to 48 (No. of units connected) | | | |
| | | | | | B | [H...0]~[H48]:0 to 48 (No. of units with heating thermo ON) | | | |
| | | | 6 | Amount of compressor command correction | A | Value displayed in hexadecimal format | | | |
| | | | | | B | — | | | |
| | | | 7 | Release control | A | Normal: [r. ...], During release control: [r.1] | | | |
| | | | | | B | — | | | |
| | | | 8 | Oil equalization control | Normal: [oiL-0] | | | | |
| | | During oil equalization control: [oiL-1] | | | | | | | |
| 9 | Oil equalization request | A | Displayed through LED segment lighting pattern | | | | | | |
| | | B | <p>If element F shown on sketch at right turned on: Header unit oil equalization request If element C shown on sketch at right turned on: Follower unit oil equalization request</p> | | | | | | |
| 10 | Refrigerant/oil recovery operation | A | Oil recovery in cooling: [C1], Normal: [C ...] | | | | | | |
| | | B | Refrigerant recovery in heating: [H1], Normal: [H ...] | | | | | | |
| 11 | Automatic addressing | A | [Ad] | | | | | | |
| | | B | During automatic addressing: [... FF], Normal: [...] | | | | | | |
| 12 | Power pick-cut | A | [dU] | | | | | | |
| | | B | Normal: [...], During 50-90% capacity operation: [_50-_90] While control is based on BUS line input: [E50-E90] | | | | | | |
| 13 | Optional control (P.C. board input) | Displays optional control status | | A | B | | | | |
| | | Operation mode selection: During priority heating (normal) | | h.*. | *.*.* | | | | |
| | | Priority cooling | | c.*. | *.*.* | | | | |
| | | Heating only | | H.*. | *.*.* | | | | |
| | | Cooling only | | C.*. | *.*.* | | | | |
| | | Priority given to No. of indoor units in operation | | n.*. | *.*.* | | | | |
| | | Priority given to specific indoor uni | | U.*. | *.*.* | | | | |
| | | External master ON/OFF: Normal | | *...* | *.*.* | | | | |
| | | Start input | | *.1. | *.*.* | | | | |
| | | Stop input | | *.0. | *.*.* | | | | |
| | | Night operation: Normal | | *.*. | ...*.* | | | | |
| | | Start input | | *.*. | 1.*.*. | | | | |
| | | Snowfall operation: Normal* | | *...* | | | | | |
| | | Start input | | *.*. | *.1.*. | | | | |
| 14 | Optional control (BUS line input) | Same as above | | | | | | | |
| 15 | Unused | | | | | | | | |
| 16 | | A | — | | | | | | |
| | | B | — | | | | | | |

| SW01 | SW02 | SW03 | Display detail | | | | | |
|---|---|---|---|---|---|--|---|--|
| 1 | 1 | 1 | Error data | A | Outdoor unit No.: [U1] to [U4] | | | |
| | | | | B | Check code (only latest one displayed) If there is no check code, [---] is displayed. If there is sub-code, check code [***] and sub-code [-**] are displayed alternately, for 3 seconds and 1 second, respectively. | | | |
| | | | | | | <SW04> push SW function: Fan operation at outdoor unit with error. 7-segment display section A: [E.1] <SW04 + SW05> push SW function: Fan operation at outdoor unit without error. 7-segment display section A: [E.0] <SW05> push SW function: Fan operation function check mode is cancelled. | | |
| | | | 2 | — | | A | — | |
| | | | | | | B | — | |
| | | | 3 | Operation mode | A | Stop [... ...] Normal cooling: [... C], Normal heating: [... H], Normal defrosting: [... J] | | |
| | | | | | B | — | | |
| | | | 4 | Outdoor unit HP capacity | A | 8HP: [... 8], 10HP: [... 10], 12HP: [... 12], 14HP: [14], 16HP: [16] | | |
| | | | | | B | [... HP] | | |
| | | | 5 | Compressor operation command intervals. | * Operation data of each compressor is displayed in turn in 2 second intervals. If compressor No. 3 does not exist, [--.---] is displayed. | | | |
| | | | | | Normal: Compressor speed (rps) is displayed in decimal format. 7-segment display (A/B): [C1. ***] ⇨ [C2. ***] ⇨ [C3. ***] ⇨ ... <SW04> push SW function: Switches to display of operating current (decimal value). 7-segment display (A/B): [i1 ***] ⇨ [i2 ***] ⇨ [i3 ***] P ... Pushing of <SW05> restores normal display. | | | |
| | | | 6 | Outdoor fan mode | A | [FP] | | |
| | | | | | B | Mode 0 to 63: [... 0] to [63] | | |
| | | | 7 | Compressor backup | A | [C.b.] | | |
| | | | | | B | Displays compressor backup setting status Normal: [...] Compressor No. 1 backup: [1] Compressor No. 2 backup: [... 1 ...] Compressor No. 3 backup: [... ... 1] | | |
| | | | 8 | — | | A | — | |
| | | B | | — | | | | |
| 9 | Control valve output data | Displays control output status of solenoid valve | | A | B | | | |
| | | 4-way valve: ON / 4-way valve 2: OFF | | H. 1 | ... .. |  |  |  |
| 10 | | | 4-way valve: OFF / 4-way valve 2: ON | | H. 0 | ... .. |  |  |
| | | | SV2: ON / SV5: OFF / SV6: OFF | | 2. ... | 1 0 0 | | |
| | | | SV2: OFF / SV5: ON / SV6: ON | | 2. ... | 0 1 0 | | |
| 11 | | | SV2: OFF / SV5: OFF / SV6: ON | | 2. ... | 0 0 1 | | |
| | | | SV3A: ON / SV3B: OFF / SV3C: OFF / SV3D: OFF | | 3. 1 | 0 0 0 | | |
| | | | SV3A: OFF / SV3B: ON / SV3C: OFF / SV3D: OFF | | 3. 0 | 1 0 0 | | |
| | | | SV3A: OFF / SV3B: OFF / SV3C: ON / SV3D: OFF | | 3. 0 | 0 1 0 | | |
| 12 | | | SV3A: OFF / SV3B: OFF / SV3C: OFF / SV3D: ON | | 3. 0 | 0 0 1 | | |
| | | | SV41: ON / SV42: OFF / SV43: OFF | | 4. ... | 1 0 0 | | |
| | | | SV41: OFF / SV42: ON / SV43: OFF | | 4. ... | 0 1 0 | | |
| 13 | | | SV41: OFF / SV42: OFF / SV43: ON | | 4. ... | 0 0 1 | | |
| | | | SV3F: OFF (SV11 A, B ON / SV14 OFF SHRM-i) | | A. ... | 0 | | |
| | | | SV3F: ON (SV11 A,B OFF / SV14 OFF SHRM-i) | | A. ... | 1 | | |
| 14 | PMV1/PMV2 opening | Displays opening data in decimal format (total opening) | | * * | * *.P | | | |
| 15 | PMV4 opening | Displays opening data in decimal format | | ...* | * *.P | | | |
| 16 | Oil level judgment status | | | | | | | |
| | Normal | A | [o L.] | | | | | |
| | | B | Initial display: [...], Oil level judgment result: [#.*.\$] Displayed letters #, * and \$ represent judgment results for compressor Nos. 1, 2 and 3, respectively ("0" for normal and "1" or "2" for low level). | | | | | |
| | <SW04> push SW function: Displays low level confirmed judgment result of each compressor. | | | | | | | |
| *Pushing of <SW05> restores normal display. | | A | [L d.] | | | | | |
| | | B | Compressor No. 1 low level being confirmed: [L] Compressor No. 2 low level being confirmed: [... L ...] Compressor No. 3 low level being confirmed: [... ... L] | | | | | |

3 Display of Outdoor Cycle Data (Displayed at Each Outdoor Unit)

| SW01 | SW02 | SW03 | Display detail | | | | | |
|-----------------|------|------------------|--|---------------|---|---------|---------------|-------------|
| 1 | 2 | Pd pressure data | Pd pressure (MPaG) is displayed in decimal format. (MPaG: Approx. 10 times magnitude of kg/cm2G) | | A | B | | |
| | | | | | Pd. | *. *. * | | |
| | | | Ps pressure data | | Ps pressure (MPaG) is displayed in decimal format. | | PS. | *. *. * |
| | | | PL pressure conversion data | | Converted PL pressure (MPaG) is displayed in decimal format. | | PL. | *. *. * |
| | | | TD1 sensor data | | Temperature sensor reading (°C) is displayed in decimal format. | | Letter symbol | td 1 |
| | | | | | | | Data | *. *. * |
| | | | TD2 sensor data | | • Letter symbol and data are displayed alternately, for 1 second and display for 3 seconds, respectively. | | Letter symbol | td 2 |
| | | | | | | | | |
| | | | TD3 sensor data | | • Data with negative value is displayed as [- *] [***]. | | Letter symbol | td 3 |
| | | | | | | | | |
| | | | TS sensor data | | | | Letter symbol | tS |
| | | | | | | | Data | *. *. * |
| | | | TE1 sensor data | | | | Letter symbol | tE 2 |
| | | | | | | | Data | *. *. * |
| | | | TE2 sensor data | | | | Letter symbol | tL |
| | | | | | | | Data | *. *. * |
| TL sensor data | | | | Letter symbol | tE | | | |
| | | | | Data | *. *. * | | | |
| TO sensor data | | | | Letter symbol | to | | | |
| | | | | Data | *. *. * | | | |
| TK1 sensor data | | | | Letter symbol | F1 | | | |
| | | | | Data | *. *. * | | | |
| TK2 sensor data | | | | Letter symbol | F2 | | | |
| | | | | Data | *. *. * | | | |
| TK3 sensor data | | | | Letter symbol | F3 | | | |
| | | | | Data | *. *. * | | | |
| TK4 sensor data | | | | Letter symbol | F4 | | | |
| | | | | Data | *. *. * | | | |
| TK5 sensor data | | | | Letter symbol | F5 | | | |
| | | | | Data | *. *. * | | | |

4 Display of Outdoor Cycle Data (Displayed at Header Unit)

* This method is used when displaying follower unit information on the 7-segment display of the header unit.

| SW01 | SW02 | SW03 | Display detail | | | |
|--------------------------------|---|---|----------------|---|-------|--|
| 3 | 1-3 | Error data | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | |
| | | | B | Check code is displayed (latest one only). If there is no check code: [---] | | |
| | | Type of compressor installed | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | |
| | | | B | | | |
| | | Outdoor unit HP capacity | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | |
| | | | B | 8HP: [8], 10HP: [10], 12HP: [... 12], 14HP: [14], 16HP: [16] 14HP: [14], 16HP: [16] | | |
| | | Compressor operation command | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | |
| | | | B | Indicates which compressor is ON. * Any unconnected compressors is represented by "-". | | |
| | | | | | B | |
| | | | | | 1 0 0 | |
| | | Fan operation mode | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | |
| B | At rest: [F ... 0], In mode 63: [F 6 3] | | | | | |
| Release signal | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | Normal: [r], Upon receiving release signal: [r ... 1] | | | | |
| Oil level judgment | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | Normal: [r], Upon receiving release signal: [r ... 1] | | | | |
| Compressor 1 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | [**.*], **.* is value of operating current in decimal format. | | | | |
| Compressor 2 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | [**.*], **.* is value of operating current in decimal format. | | | | |
| Compressor 3 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | [**.*], **.* is value of operating current in decimal format. | | | | |
| Fan operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U4) | | | | |
| | B | [**.*], **.* is value of operating current in decimal format. | | | | |

Note) Follower unit is selected by setting SW03.

| SW03 | 7-segment display section A |
|------|-----------------------------|
| 1 | U2 |
| 2 | U3 |
| 3 | U4 |

5 Display of Indoor Unit Information (Displayed on Header Unit Only)

| SW01 | SW02 | SW03 | Display detail | | |
|------|------|------|--|---|--|
| 4 | 1~16 | 1~4 | Indoor BUS communication signal receiving status | B | Upon receiving signal: [... .. 1], Other times: [... ..] |
| 5 | | | Indoor check code | B | No check code: [- -] |
| 6 | | | Indoor HP capacity | B | 0. 2, 0. 5, 0. 8, ... 1, 1. 2, 1. 7, ... 2, 2. 5, ...3, 3. 2, ...4, ...5, ...6, ...8, 1 0, 1 6, 2 0 |
| 7 | | | Indoor request command (S code, operation mode) | B | [#. ... *] # represents mode: COOL: [C. ... *], HEAT: [H. ... *] FAN: [F. ... *], OFF: [S. ... *] * represents S code: [#. ... 0] to [#. ... F] |
| 8 | | | Indoor PMV opening data | B | Displayed in decimal format |
| 9 | | | Indoor TA sensor data | B | Displayed in decimal format |
| 11 | | 1~4 | Indoor TCJ sensor data | B | Displayed in decimal format |
| 12 | | | Indoor TC1 sensor data | B | Displayed in decimal format |
| 13 | | | Indoor TC2 sensor data | B | Displayed in decimal format |

Note) Indoor address No. is selected by setting **SW02** and **SW03** and displayed on 7-segment display, section A.

| SW03 | SW02 | Indoor address | 7-segment display section A |
|------|------|-------------------------|-----------------------------|
| 1 | 1~16 | SW02 setting number | [01]~[16] |
| 2 | 1~16 | SW02 setting number +16 | [17]~[32] |
| 3 | 1~16 | SW02 setting number +32 | [33]~[48] |
| 4 | 1~16 | SW02 setting number +48 | [49]~[64] |

* Although 64 indoor unit addresses (Nos. 01-64) are theoretically available, the number of indoor units that can be connected to the same refrigerant piping system is limited to 48.

6 Display of Outdoor EEPROM Writing Error Code (Displayed on Header Unit Only)

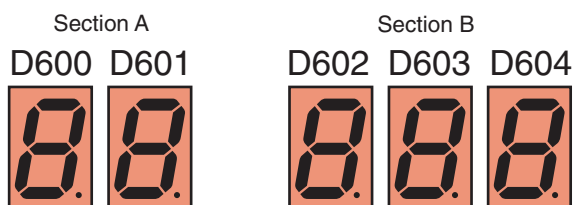
* The latest error code written in the **EEPROM** of each outdoor unit is displayed.

(This function is used to check the error code after the resetting of the power supply.)

To display the error code, push **SW04** and hold for at least 5 seconds after setting **SW01** to **03** as shown in the table below.

| SW01 | SW02 | SW03 | Indoor address | 7-segment display section A | |
|------|------|------|---|-----------------------------|-----|
| 1 | 1 | 16 | Latest error code of header unit (U1) | E. 1. | *** |
| | 2 | | Latest error code of follower unit No. 1 (U2) | E. 2. | *** |
| | 3 | | Latest error code of follower unit No. 2 (U3) | E. 3. | *** |
| | 4 | | Latest error code of follower unit No. 3 (U4) | E. 4. | *** |

• 7-Segment Display



Set **SW01/SW02/SW03** to [1/1/16] and push **SW04** and hold for at least 5 seconds. The latest error code of the header unit (**U1**) will be displayed.

If the setting of **SW02** is changed, the latest error code of a follow unit (**U2-U4**) will be displayed.

Displayed at Each Outdoor Unit

| SW01 | SW02 | SW03 | Display detail | | | | |
|------|-----------------|---------------|-----------------------------|--|--|--------|----------|
| 1 | 1 | 2 | Pd pressure data | Pd pressure (MPaG) is displayed in decimal format. (MPaG: Approx. 10 times magnitude of kg/cm ² G) | A | B | |
| | | | | | P d. | *. * * | |
| | | | 2 | Ps pressure data | Ps pressure (MPaG) is displayed in decimal format. | P s. | *. * * |
| | 3 | | PL pressure conversion data | Converted PL pressure (MPaG) is displayed in decimal format. | P L. | *. * * | |
| | 4 | | TD1 sensor data | Temperature sensor reading (°C) is displayed in decimal format. • Letter symbol and data are displayed alternately, for 1 second and display for 3 seconds, respectively. • Data with negative value is displayed as [- *] [* * *]. | Letter symbol | t d | 1 |
| | | | | | Data | * | * * * |
| | 5 | | TD2 sensor data | | Letter symbol | t d | 2 |
| | | | | | Data | * | * * * |
| | 6 | | TD3 sensor data | | Letter symbol | t d | 3 |
| | | | | | Data | * | * * * |
| | 7 | | TS1 sensor data | | Letter symbol | t S | 1 |
| | | | | | Data | * | * * * |
| 8 | TS2 sensor data | Letter symbol | t S | | 2 | | |
| | | Data | * | | * * * | | |
| 9 | TE1 sensor data | Letter symbol | t E | | 1 | | |
| | | Data | * | | * * * | | |
| 10 | TE2 sensor data | Letter symbol | t E | 2 | | | |
| | | Data | * | * * * | | | |
| 11 | TL sensor data | Letter symbol | t L | ... .. |  |  |  |
| | | Data | * | * * * | | | |
| 12 | TO sensor data | Letter symbol | t o | ... .. |  |  |  |
| | | Data | * | * * * | | | |

| SW01 | SW02 | SW03 | Display detail | | | | | |
|------|------|-----------------|-----------------|--|-----------------|---------------|--------|--------|
| 1 | 1 | 5 | TK1 sensor data | Temperature sensor reading (°C) is displayed in decimal format. • Letter symbol and data are displayed alternately, for 1 second and display for 3 seconds, respectively. • Data with negative value is displayed as [- *] [* * *]. | A | B | | |
| | | | | | Letter symbol | F 1 | ... .. |  |
| | Data | | | | * | * * * | | |
| | 2 | | | | TK2 sensor data | Letter symbol | F 2 | |
| | | | | | | Data | * | * * * |
| | 3 | TK3 sensor data | | | Letter symbol | F 3 | ... .. |  |
| | | | | | Data | * | * * * | |
| | 4 | TK4 sensor data | | | Letter symbol | F 4 | ... .. |  |
| | | | | | Data | * | * * * | |
| | 5 | TK5 sensor data | | | Letter symbol | F 5 | ... .. |  |
| Data | | | * | * * * | | | | |

Display of Outdoor Cycle Data (Displayed at Header Unit)

* This method is used when displaying follower unit information on the 7-segment display of the header unit.

| SW01 | SW02 | SW03 | Display detail | | | |
|------|--------------------------------|-------|---|---|---|-------|
| 3 | 1 | 1~2 | Error data | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | |
| | | | | B | Check code is displayed (latest one only). If there is no check code: [- - -]. | |
| | 2 | | Type of compressor installed | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | |
| | | | | B | | |
| | 3 | | Outdoor unit HP capacity | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | |
| | | | | B | 8HP: [... 8], 10HP: [... 10], 12HP: [... 12], 14HP: [14] | |
| | 4 | | Compressor operation command | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | |
| | | | | B | Indicates which compressor is ON. | |
| | | | | | * Any unconnected compressors is represented by “-” | A |
| | | | | | When compressor No. 1 is ON | 1 0 0 |
| | | | | | When compressor No. 2 is ON | 0 1 0 |
| | When compressor No. 3 is ON | 0 0 1 | | | | |
| 5 | Fan operation mode | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | At rest: [F ... 0], In mode 63: [F 6 3] | | | |
| 6 | Release signal | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | Normal: [r], Upon receiving release signal: [r ... 1] | | | |
| 7 | Oil level judgment | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | Normal: [...], Low level: [... ... L] | | | |
| 8 | Compressor 1 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | [**.*], **.* is value of operating current in decimal format. | | | |
| 9 | Compressor 2 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | [**.*], **.* is value of operating current in decimal format. | | | |
| 10 | Compressor 3 operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | [**.*], **.* is value of operating current in decimal format. | | | |
| 11 | Fan operating current | A | [U.*], *: SW03 setting No. + 1 (Outdoor unit No. U2 to U3) | | | |
| | | B | [**.*], **.* is value of operating current in decimal format. | | | |

Note) Follower unit is selected by setting **SW03**.

| SW01 | 7-segment display section A |
|------|-----------------------------|
| 1 | U2 |
| 2 | U3 |

Display of Indoor Unit Information (Displayed on Header Unit Only)

| SW01 | SW02 | SW03 | Display detail | | |
|------|------|------|--|--|-------------------------------|
| 4 | 1~16 | 1~3 | Indoor BUS communication signal receiving status | B Upon receiving signal: [... .. 1], Other times: [... ..] | |
| 5 | | | Indoor check code | B No check code: [---] | |
| 6 | | | Indoor HP capacity | B 0. 2, 0. 5, 0. 8, ... 1, 1. 2, 1. 7, ... 2, 2. 5, ...3, 3. 2, ...4, ...5, ...6, ...8, 1 0, 1 6, 2 0 | |
| 7 | | | Indoor request command (S code, operation mode) | B [# *] # represents mode: COOL: [C. ... *], HEAT: [H. ... *] FAN: [F. ... *], OFF: [S. ... *] * represents S code: [# 0] to [# F] | |
| 8 | | | Indoor PMV opening data | Displayed in decimal format | |
| 9 | | | Indoor TA / TRA opening data | Displayed in decimal format | |
| 10 | | | 11~13 | Indoor TSA opening data | Displayed in decimal format |
| | | | 1~3 | Indoor TF / TFA opening data | Displayed in decimal format |
| 11 | | | 11~13 | Indoor TOA opening data | Displayed in decimal format |
| | | | 1~3 | Indoor TCJ opening data | B Displayed in decimal format |
| 12 | | | 1~3 | Indoor TC1 opening data | B Displayed in decimal format |
| 13 | | | 1~3 | Indoor TC2 opening data | B Displayed in decimal format |

Note) Indoor address No. is selected by setting **SW02** and **SW03** and displayed on 7-segment display, section A.

| SW02 | SW03 | Indoor address | 7-segment display section A |
|------|------|-------------------------|-----------------------------|
| 1~16 | 1 | SW02 setting number | [01]~[16] |
| | 11 | | |
| | 2 | SW02 setting number +16 | [17]~[32] |
| | 12 | | |
| | 3 | SW02 setting number +32 | [33]~[48] |
| | 13 | | |

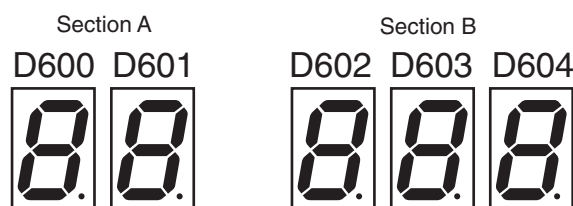
Display of Outdoor EEPROM Writing Error Code (Displayed on Header Unit Only)

* The latest error code written in the **EEPROM** of each outdoor unit is displayed.
(This function is used to check the error code after the resetting of the power supply.)

To display the error code, push **SW04** and hold for at least 5 seconds after setting **SW01** to **03** as shown in the table below.

| SW01 | SW02 | SW03 | Indoor address | 7-segment display section A | |
|------|------|------|---|-----------------------------|-----|
| 1 | 1 | 16 | Latest error code of header unit (U1) | E. 1. | *** |
| | 2 | | Latest error code of follower unit No. 1 (U2) | E. 2. | *** |
| | 3 | | Latest error code of follower unit No. 2 (U3) | E. 3. | *** |

7-Segment Display



Set **SW01/SW02/SW03** to [1/1/16] and push **SW04** and hold for at least 5 seconds.
The latest error code of the header unit (**U1**) will be displayed.

If the setting of **SW02** is changed, the latest error code of a follow unit (**U2-U3**) will be displayed.

Pulse Motor Valve (PMV) Forced Open/Close Function in Indoor Unit

This function is provided to open or close forcibly **PMV** for 2 minutes in all the indoor units by the switch operation on the interface P.C. board of the header unit.

This function is also used to open **PMV** fully when turning off the power and executing an operation.

<Operation>

[Open fully]

Set the switches **SW01/SW02/SW03** on the interface P.C. board of the header unit to [2/3/1], and push **SW04** for 2 seconds or more. (Display appears on 7-segment display for 2 minutes as follows.) [P] [FF]

[Close fully]

Set the switches **SW01/SW02/SW03** on the interface P.C. board of the header unit to [2/3/1], and push **SW05** for 2 seconds or more. (Display appears on 7-segment display for one minute as follows.) [P] [00]

[Clear]

After 2 minutes (1 minutes for “Close fully”) after setting up, the opening automatically returns to the normal opening.

Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcibly open each solenoid valve mounted in the outdoor unit by the switch operation on the interface P.C. board in the outdoor unit.

Use this function to check there is no refrigerant clogging with ON/ OFF operation of the solenoid valve.

[Operation]

- Set the switches **SW01/SW02/SW03** on the interface P.C. board of the outdoor unit to [2/1/3].
- When [H. r] is displayed in 7-segment display [A], keep pushing the switch **SW04** for 2 seconds or more.
- From when [2] is displayed in 7-segment display [B], **SV2** is turned on.
- After then, ON and OFF of each solenoid valve are exchanged by changing the setup number of the switch **SW02**.

(ON/OFF output pattern of each solenoid valve is as shown below.)

NOTE 1)

Display in 7-segment display [B] is exchanged just when the number of **SW02** has been changed; on the other hand, the solenoid valve output is exchanged when **SW02** has been kept with the same number for 5 seconds or more.

NOTE 2)

The mark [○] in the table indicates that the corresponding solenoid valve is forcibly turned on.

NOTE 3)

The mark [—] in the table indicates that ON/OFF of the solenoid valve is controlled based upon the specifications of the air conditioner.

NOTE 4)

The mark [×] in the table indicates that the corresponding solenoid valve is forcibly turned off with this operation.

NOTE 5)

The case heater output is for both the compressor and accumulator heaters.

| SW02 | 7-segment display [B] | Operation pattern of solenoid valve | | | | | | | | | | | | Case heater output relay |
|-------|-----------------------|-------------------------------------|-----|------|------|------|------|------|------|------|------|------|------|--------------------------|
| | | SV2 | SV5 | SV41 | SV42 | SV43 | SV3A | SV3B | SV3C | SV3D | SV3E | SV3F | SV61 | |
| 1 | [2] | ○ | — | — | — | — | — | — | — | — | ○ | — | — | ○ |
| 2 | [5] | — | ○ | — | — | — | — | — | — | — | ○ | — | — | ○ |
| 3 | [41] | — | — | ○ | — | — | — | — | — | — | ○ | — | — | ○ |
| 4 | [42] | — | — | — | ○ | — | — | — | — | — | ○ | — | — | ○ |
| 5 | [43] | — | — | — | — | ○ | — | — | — | — | ○ | — | — | ○ |
| 6 | [3A] | — | — | — | — | — | ○ | — | — | — | ○ | — | — | ○ |
| 7 | [3b] | — | — | — | — | — | — | ○ | — | — | ○ | — | — | ○ |
| 8 | [3C] | — | — | — | — | — | — | — | ○ | × | ○ | ○ | — | ○ |
| 9 | [3b] | — | — | — | — | — | — | — | — | ○ | × | ○ | — | ○ |
| 10 | [3-] | — | — | — | — | — | — | ○ | ○ | ○ | × | ○ | × | ○ |
| 11 | [61] | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ |
| 12~15 | | — | — | — | — | — | — | — | — | — | — | ○ | — | ○ |
| 16 | ALL | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

* If the outdoor unit has no valve, then 7-segment display [B] shows [- -].

[Clear]

Return switches **SW01/SW02/SW03** on the interface P.C. board to [1/1/1].

NOTE) As this function is not based on the specified general control, be sure to release this mode after checking.

Solenoid Valve Forced Open/Close Function in Outdoor Unit

This function is provided to forcedly open each solenoid valve mounted in the outdoor unit by the switch operation on the interface P.C. board in the outdoor unit.

Use this function to check there is no refrigerant clogging with ON/OFF operation of the solenoid valve.

[Operation]

- (1) Set the switches **SW01/SW02/SW03** on the interface P.C. board of the outdoor unit to [2/1/3].
- (2) When [H. r] is displayed in 7-segment display [A], keep pushing the switch **SW04** for 2 seconds or more.
- (3) From when [2] is displayed in 7-segment display [B], **SV2** is turned on.
- (4) After then, ON and OFF of each solenoid valve are exchanged by changing the setup number of the switch **SW02**.
(ON/OFF output pattern of each solenoid valve is as shown below.)

NOTE 1) Display in 7-segment display [B] is exchanged just when the number of **SW02** has been changed; on the other hand, the solenoid valve output is exchanged when **SW02** has been kept with the same number for 5 seconds or more.

NOTE 2) The mark [○] in the table indicates that the corresponding solenoid valve is forcedly turned on.

NOTE 3) The mark [—] in the table indicates that ON/OFF of the solenoid valve is controlled based upon the specifications of the air conditioner.

NOTE 4) The mark [X] in the table indicates that the corresponding solenoid valve is forcedly turned off with this operation.

NOTE 5) The case heater output is for both the compressor and accumulator heaters.

| SW02 | 7-segment display [B] | Operation pattern of solenoid valve | | | | | | | | | | | | | | Case heater output |
|------|-----------------------|-------------------------------------|-----|------|------|------|------|------|------|------|------|------|-----|------|------|--------------------|
| | | SV2 | SV5 | SV41 | SV42 | SV43 | SV3A | SV3B | SV3C | SV3D | SV3E | SV3F | SV6 | SV11 | SV14 | |
| 1 | [2] | ○ | — | — | — | — | — | — | — | — | ○ | — | — | — | — | ○ |
| 2 | [5] | — | ○ | — | — | — | — | — | — | — | ○ | — | — | — | — | ○ |
| 3 | [41] | — | — | ○ | — | — | — | — | — | — | ○ | — | — | — | — | ○ |
| 4 | [42] | — | — | — | ○ | — | — | — | — | — | ○ | — | — | — | — | ○ |
| 5 | [43] | — | — | — | — | ○ | — | — | — | — | ○ | — | — | — | — | ○ |
| 6 | [3A] | — | — | — | — | — | ○ | — | — | — | ○ | — | — | — | — | ○ |
| 7 | [3b] | — | — | — | — | — | — | ○ | — | — | ○ | — | — | — | — | ○ |
| 8 | [3C] | — | — | — | — | — | — | — | ○ | X | ○ | ○ | — | — | — | ○ |
| 9 | [3d] | — | — | — | — | — | — | — | — | ○ | X | ○ | — | — | — | ○ |
| 10 | [3—] | — | — | — | — | — | ○ | ○ | ○ | X | ○ | X | — | — | — | ○ |
| 11 | [6] | — | — | — | — | — | — | — | — | — | ○ | — | ○ | — | — | ○ |
| 12 | [] | — | — | — | — | — | — | — | — | — | ○ | — | — | — | — | ○ |
| 13 | [11] | — | — | — | — | — | — | — | — | — | ○ | — | — | ○ | — | ○ |
| 15 | [14] | — | — | — | — | — | — | — | — | — | ○ | — | — | — | ○ | ○ |
| 16 | [ALL] | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

[Clear]

Return switches **SW01/SW02/SW03** on the interface P.C. board to [1/1/1].

NOTE) As this function is not based on the specified general control, be sure to release this mode after checking.

Fan Operation Check in Outdoor Unit

This function is provided to check the fan operation of the outdoor unit by using switches on the interface P.C. board in the outdoor unit. The frequency of the fan speed can be controlled by setting of the switches. Use this function to check the operation or abnormal sound in the fan system. And, use this function while the system is stopped.

NOTE) Do not use this function during operation of the compressor. It may damage the compressor.

[Operation]

- (1) Set the switches **SW01/SW02/SW03** on the interface P.C. board of the outdoor unit to [2/1/4].
 - (2) When [F. d] is displayed in 7-segment display [A], keep pushing the switch **SW04** for 2 seconds or more.
 - (3) When [63] is displayed in 7-segment display [B], the fan starts operation. (Max. mode operation)
 - (4) After that, by changing the setup number of the switches **SW02** and **SW03**, 7-segment display [B] and the fan mode are changed.
- (Mode output pattern of the fan is as follows.)

| SW02 | SW03 | 7-segment display [B] | Fan mode |
|------|------|-----------------------|----------|
| 1 | 4 | [63] | 63 |
| 2 | | [62] | 62 |
| 3 | | [61] | 61 |
| 4 | | [60] | 60 |
| 5 | | [59] | 59 |
| 6 | | [58] | 58 |
| 7 | | [57] | 57 |
| 8 | | [56] | 56 |
| 9 | | [55] | 55 |
| 10 | | [54] | 54 |
| 11 | | [53] | 53 |
| 12 | | [52] | 52 |
| 13 | | [51] | 51 |
| 14 | | [50] | 50 |
| 15 | | [49] | 49 |
| 16 | | [48] | 48 |
| 1 | 5 | [47] | 47 |
| 2 | | [46] | 46 |
| 3 | | [45] | 45 |
| 4 | | [44] | 44 |
| 5 | | [43] | 43 |
| 6 | | [42] | 42 |
| 7 | | [41] | 41 |
| 8 | | [40] | 40 |
| 9 | | [39] | 39 |
| 10 | | [38] | 38 |
| 11 | | [37] | 37 |
| 12 | | [36] | 36 |
| 13 | | [35] | 35 |
| 14 | | [34] | 34 |
| 15 | | [33] | 33 |
| 16 | | [32] | 32 |

| SW02 | SW03 | 7-segment display [B] | Fan mode |
|------|------|-----------------------|----------|
| 1 | 6 | [31] | 31 |
| 2 | | [30] | 30 |
| 3 | | [29] | 29 |
| 4 | | [28] | 28 |
| 5 | | [27] | 27 |
| 6 | | [26] | 26 |
| 7 | | [25] | 25 |
| 8 | | [24] | 24 |
| 9 | | [23] | 23 |
| 10 | | [22] | 22 |
| 11 | | [21] | 21 |
| 12 | | [20] | 20 |
| 13 | | [19] | 19 |
| 14 | | [18] | 18 |
| 15 | | [17] | 17 |
| 16 | | [16] | 16 |
| 1 | 7 | [15] | 15 |
| 2 | | [14] | 14 |
| 3 | | [13] | 13 |
| 4 | | [12] | 12 |
| 5 | | [11] | 11 |
| 6 | | [10] | 10 |
| 7 | | [9] | 9 |
| 8 | | [8] | 8 |
| 9 | | [7] | 7 |
| 10 | | [6] | 6 |
| 11 | | [5] | 5 |
| 12 | | [4] | 4 |
| 13 | | [3] | 3 |
| 14 | | [2] | 2 |
| 15 | | [1] | 1 |
| 16 | | [0] | 0 |

[Clear]

This function is cleared by one of the following operations.

- (1) When **SW01** setting number was changed to other number.
- (2) Push-switch **SW05** was push for 2 seconds or more.

Abnormal Outdoor Unit Discrimination Method By Fan Operating Function

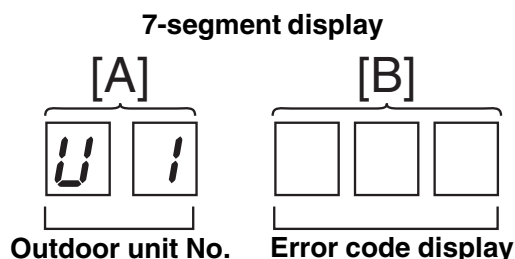
This function is provided to forcedly operate the fan of the outdoor unit in which an error occurred or the fan of the normal outdoor unit by the switch operation on the interface P.C. board in the header unit.

To specify which one of the follower units connected to the system was faulty, use this function for the system stop due to a follower unit fault (Check code [E28]).

[Operation]

<In case to operate the fan in the erroneous outdoor unit only>

- (1) Check that the switches **SW01/SW02/SW03** on the interface P.C. board in the header unit are set to [1/1/1].



- (2) Push the push-switch **SW04** for 2 seconds or more.
- (3) [E 1] is displayed on 7-segment display [A].
- (4) The fan of the outdoor unit in which error occurred starts operation within approx. 10 seconds after [E 1] was displayed.

<In case to operate the fans in all the normal outdoor units>

- (1) Check that the switches **SW01/SW02/SW03** on the interface P.C. board in the header unit are set to [1/1/1].
- (2) Push the push-switches **SW04** and **SW05** at the same time for 2 seconds or more.
- (3) [E 0] is displayed on 7-segment display [A].
- (4) The fans of all the normal outdoor units start operation with the Max. fan speed within approx. 10 seconds after [E 0] was displayed.

[Release]

Push the push-switch **SW05** on the interface P.C. board in the header unit for 2 seconds or more. The outdoor fan which was operated stops.

* Check that [U. 1] is displayed on 7-segment display [A], and then finish the work.

SMMS-i only

Pulse Motor Valve (PMV) Forced Open Fully/Close fully Function Outdoor Unit

This function is provided to forcedly open or close fully P.M.V. (PMV1/PMV2, PMV4) used in the outdoor unit for 2 minutes.

[PMV1/PMV2 Open fully]

On the interface board of the outdoor unit, set the dip switch [SW12 • bit1] to [OFF], [SW12 • bit2] to [OFF], and shortcircuit CN30.

[PMV1/PMV2 Close fully]

On the interface board of the outdoor unit, set the dip switch [SW12 • bit1] to [OFF], [SW12 • bit2] to [OFF], and shortcircuit CN31.

[PMV4 Open fully]

On the interface board of the outdoor unit, set the dip switch [SW12 • bit1] to [OFF], [SW12 • bit2] to [ON], and shortcircuit CN30.

[PMV4 Close fully]

On the interface board of the outdoor unit, set the dip switch [SW12 • bit1] to [OFF], [SW12 • bit2] to [ON], and shortcircuit CN31.

[Clear]

For both open fully and close fully, after 2 minutes, the opening returns to the normal opening.

Be sure to remove the cord used for short-circuit after confirmation, and set the dip switch [SW12 • bit1] to [OFF] and [SW12 • bit2] to [OFF].

Manual Adjustment Function of Outside Temperature (TO) Sensor

This function is provided to fix TO sensor value manually by the switch operation on the interface P.C. board in the outdoor unit. When the unit stops abnormally due to TO sensor failure, etc, an emergent operation is available by setting up the value manually to position near the current outside temperature.

[Operation]

- (1) Set the rotary switches on the interface P.C. board to numbers as follows:
 - SW01/SW02/SW03 to [2/1/15]
 - 7-segment display: [t o]
- (2) Keep pushing the push switch SW04 on the interface P.C. board for 1 second or more. The mode changes to the TO sensor value fix manual mode.
- (3) As shown in the following table, TO sensor value can be fixed by setting the rotary switch SW02 on the interface P.C. board.

[Clear]

Return SW01/SW02/SW03 on the interface P.C. board in the outdoor unit to [1/1/1].

| SW02 | 7-segment display [B] | TO sensor value |
|------|-----------------------|-----------------|
| 1 | [10] | 10°C |
| 2 | [15] | 15°C |
| 3 | [20] | 20°C |
| 4 | [25] | 25°C |
| 5 | [30] | 30°C |
| 6 | [35] | 35°C |
| 7 | [40] | 40°C |
| 8 | [43] | 43°C |
| 9 | [45] | 45°C |
| 10 | [-15] | -15°C |
| 11 | [-10] | -10°C |
| 12 | [- 5] | -5°C |
| 13 | [0] | 0°C |
| 14 | [2] | 2°C |
| 15 | [5] | 5°C |
| 16 | [7] | 7°C |

NOTE) If operated with TO sensor fixed by this function, the system control operation of the air conditioner may not be based on the specification of the product. Therefore an emergent operation should be restricted to a day or so.

<Service support function list>

| SW01 | SW02 | SW03 | 7-segment display [A] | Function contents |
|------|------|------|-----------------------|---|
| 2 | 1 | 1 | [J . C] | Refrigerant circuit and control communication line check function (Cooling operation) |
| | 2 | | [J . H] | Refrigerant circuit and control communication line check function (Heating operation) |
| | 3 | | [P .] | Indoor PMV forced full open function |
| | 4 | | [A . 1] | Indoor remote controller discriminating function |
| | 5 | | [C .] | Cooling test operation function |
| | 6 | | [H .] | Heating test operation function |
| | 7 | | [C . H] | Indoor collective start/stop (ON/OFF) function |
| | 11 | | [r . d] | Outdoor refrigerant recovery operation function (Pump down function) |
| | 16 | | [E . r] | Error clear function |

| | | | | |
|---|------|-----|---------|---|
| 2 | 1~16 | 3 | [H . r] | Solenoid valve forced open/close function |
| 2 | | 4~7 | [F . d] | Fan forced operation function |
| 2 | | 15 | [t . o] | Outside temperature sensor manual adjustment function |

| | | | | | |
|----|------|----|-------------|--------------------------|--|
| 16 | 1~16 | 1 | [0 1]~[1 6] | Indoor No. 1 to 16 unit | Indoor individual start/stop (ON/OFF) function |
| | | 2 | [1 7]~[3 2] | Indoor No. 17 to 32 unit | |
| | | 34 | [3 3]~[4 8] | Indoor No. 33 to 48 unit | |

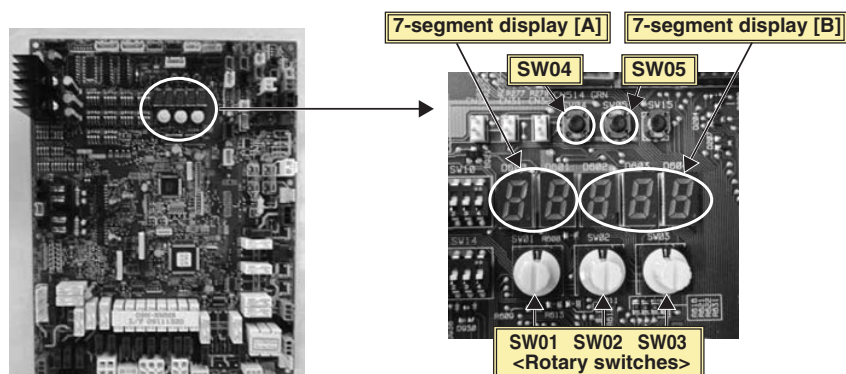
| SW01 | SW02 | SW03 | 7-segment display [A/B] | Function contents |
|------|------|------|-------------------------|---|
| 1 | 1 | 1 | [U 1] [E28] | Follower unit error / Corresponding unit fan operation function |

The following functions of the indoor unit can start or stop by the switches on the interface P.C. board of the header unit.

| No | Function | Outline | Setup/Release | 7-segment display |
|----|---------------------------|--|---|---|
| 1 | Cooling test operation | Changes the mode of all the connected indoor units collectively to cooling test operation. Note) Control operation same as usual test operation from remote control is performed. | [Setup] Set SW01/SW02/SW03 to [2/5/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [C.] Section B [¼C] |
| 2 | Heating test operation | Changes the mode of all the connected indoor units collectively to heating test operation. Note) Control operation same as usual test operation from remote control is performed. | [Setup] Set SW01/SW02/SW03 to [2/6/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [H.] Section B [¼H] |
| 3 | Batch start | Starts all the connected indoor units collectively. Note) The contents follow to the setup of remote controller. | [Setup] Set SW01/SW02/SW03 to [2/7/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1] | Section A [C. H] Section B [11] [00] is displayed on Section B for 5 seconds. |
| | Batch stop | Stops all the connected indoor units collectively. | [Setup] Set SW01/SW02/SW03 to [2/7/1], and push SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1]. | Section A [C. H] Section B [00] [00] is displayed on Section B for 5 seconds. |
| 4 | Individual start | Starts the specified indoor unit. Notes) The contents follow to the setup of remote controller. The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 64) to be started, and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] Section [] Section A: Displays the corresponding indoor address. Section B: Displays [11] for 5 seconds from operation-ON. |
| | Individual stop | Stops the specified indoor unit. Note) The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 64) to be stopped, and push SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] Section [] Section A: Displays the corresponding indoor address. Section B: Displays [00] for 5 seconds from operation-OFF. |
| | Individual test operation | Operates the specified indoor unit. Note) The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. to be operated, and push SW04 for 10 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] Section [] Section A: Displays the corresponding indoor address. Section B: Displays [FF] for 5 seconds from test operation-ON. |

NOTE

- 1) This start/stop function only sends the signals from the outdoor unit to the indoor unit, such as start, stop, operation mode, etc.
It does not resend the signals even if the indoor unit does not follow the sent signals.
- 2) The above controls are not used during abnormal stop.



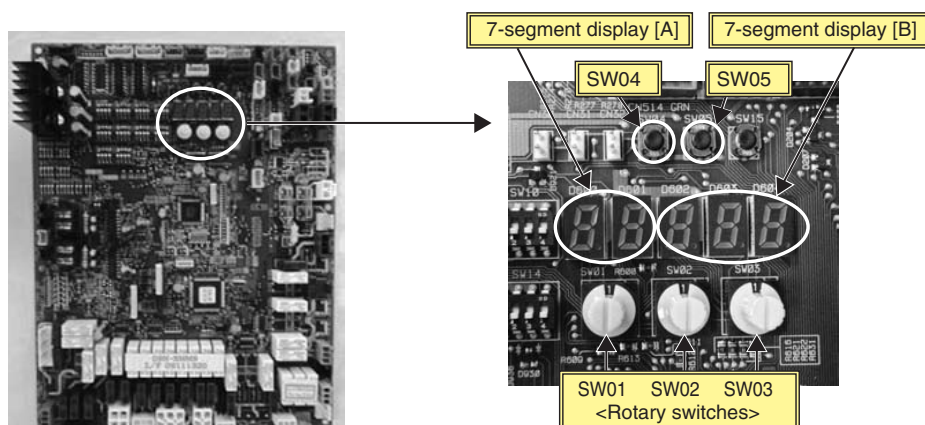
Indoor Unit from Outdoor Unit

The following functions of the indoor unit can start or stop by the switches on the interface P.C. board of the header unit.

| No. | Function | Outline | Setup/Release | 7-segment display | |
|-----|-------------------------------|---|---|--------------------|--|
| 1 | Single cooling test operation | Changes the mode of all the connected indoor units collectively to cooling test operation. Note) Control operation same as usual test operation from remote control is performed. | [Setup] Set SW01/SW02/SW03 to [2/5/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [C.] | Section B [- C] |
| 2 | Single heating test operation | Changes the mode of all the connected indoor units collectively to heating test operation. Note) Control operation same as usual test operation from remote control is performed. | [Setup] Set SW01/SW02/SW03 to [2/6/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [H.] | Section B [- H] |
| 3 | Fan test operation | Changes operation mode of all the connected indoor units collectively to test operation mode. Note) Control operation same as usual test operation from remote control is performed. | [Setup] Set SW01/SW02/SW03 to [2/9/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [F.] | Section B [- F] |
| 4 | Batch start | Starts all the connected indoor units collectively. Note) The contents follow to the setup of remote controller. | [Setup] Set SW01/SW02/SW03 to [2/7/1], and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1]. | Section A [C.H] | Section B [11] [00] is displayed on Section B for 5 seconds. |
| | Batch stop | Stops all the connected indoor units collectively. | [Setup] Set SW01/SW02/SW03 to [2/7/1], and push SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1]. | Section A [C.H] | Section B [00] [00] is displayed on Section B for 5 seconds. |
| 5 | Individual start | Starts the specified indoor unit. Notes) • The contents follow to the setup of remote controller. • The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 48) to be started, and push SW04 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] | Section B [] Section A: Displays the corresponding indoor address. Section B: Displays [11] for 5 seconds from operation-ON. |
| | Individual stop | Stops the specified indoor unit. Note) The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. (1 to 48) to be stopped, and push SW05 for 2 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] | Section B [] Section A: Displays the corresponding indoor address. Section B: Displays [00] for 5 seconds from operation-OFF. |
| | Individual test operation | Operates the specified indoor unit. Note) The other indoor units keep the status as they are. | [Setup] Set SW01 to [16], set SW02 and SW03 to address No. to be operated, and push SW04 for 10 seconds or more. [Release] Return SW01/SW02/SW03 to [1/1/1]. | Section A [] | Section B [] Section A: Displays the corresponding indoor address. Section B: Displays [FF] for 5 seconds from test operation-ON. |

NOTE 1) This start/stop function only sends the signals from the outdoor unit to the indoor unit, such as start, stop, operation mode, etc. It does not resend the signals even if the indoor unit does not follow the sent signals.

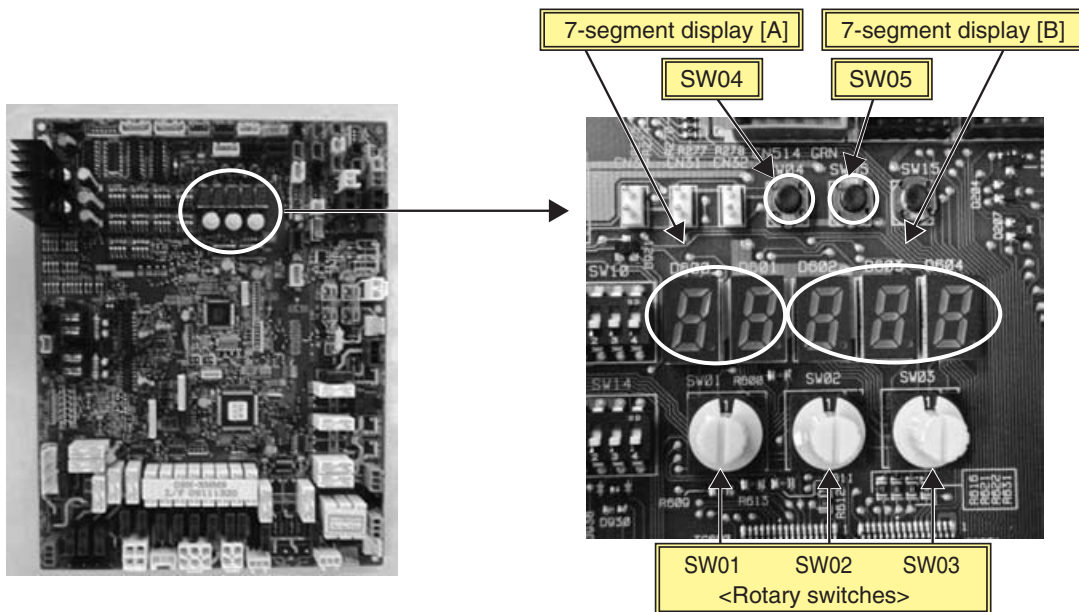
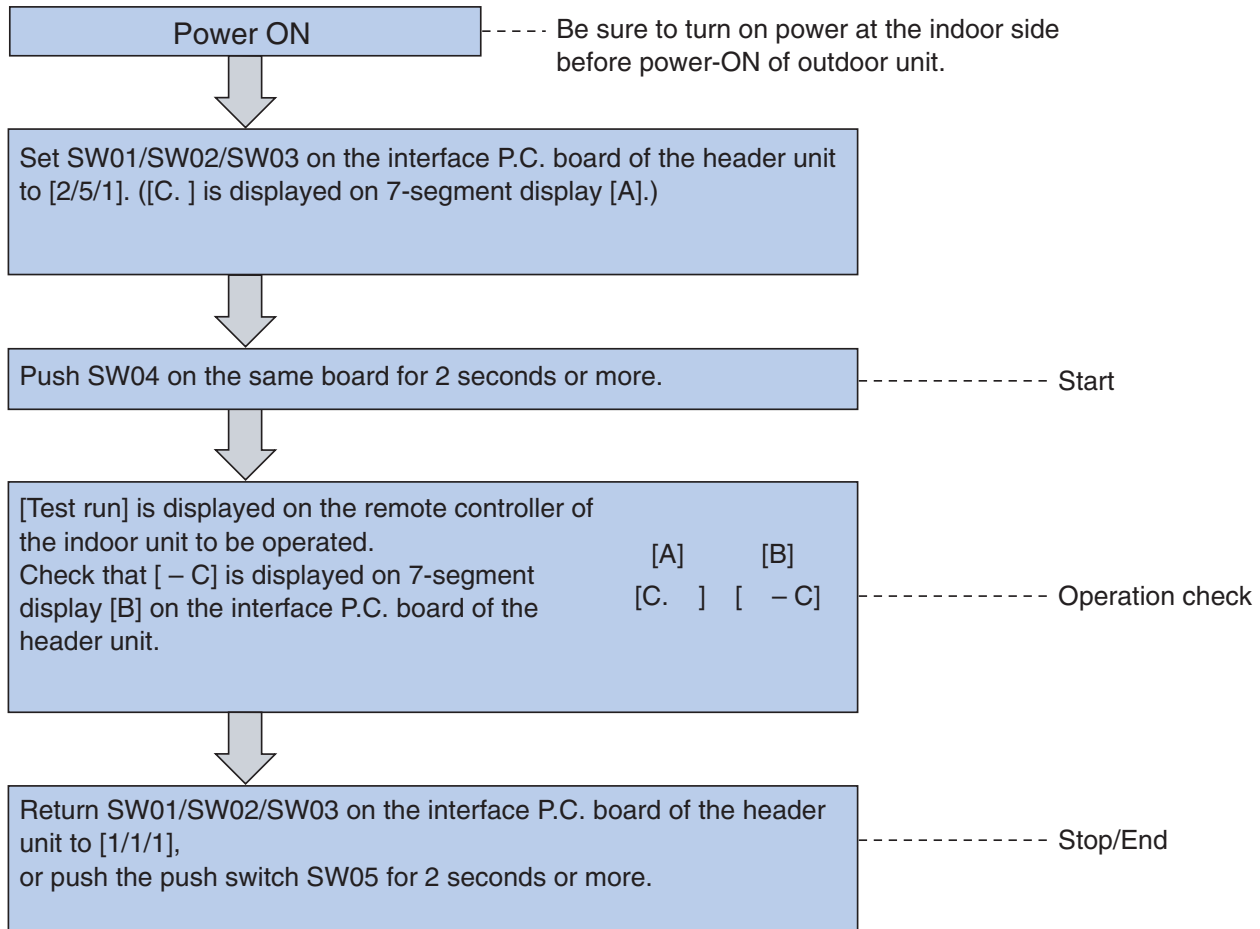
NOTE 2) The above controls are not used during abnormal stop.



(1) Single cooling test operation function

This function is provided to change collectively the mode of all the indoor units connected to the same system for the cooling test operation mode, by using switches on the interface P.C. board of the header unit.

<Operation procedure>

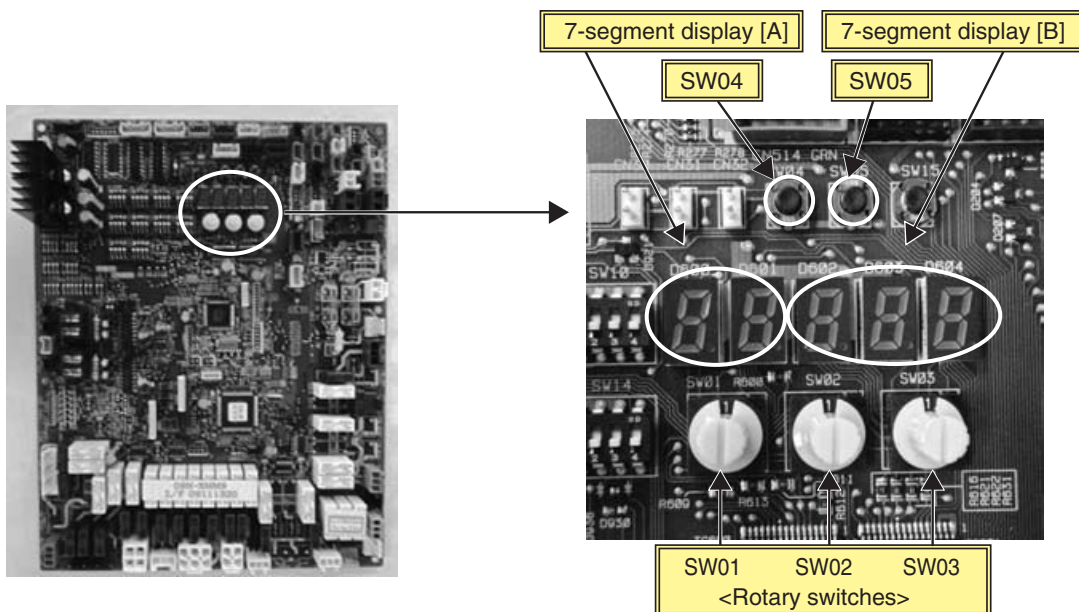
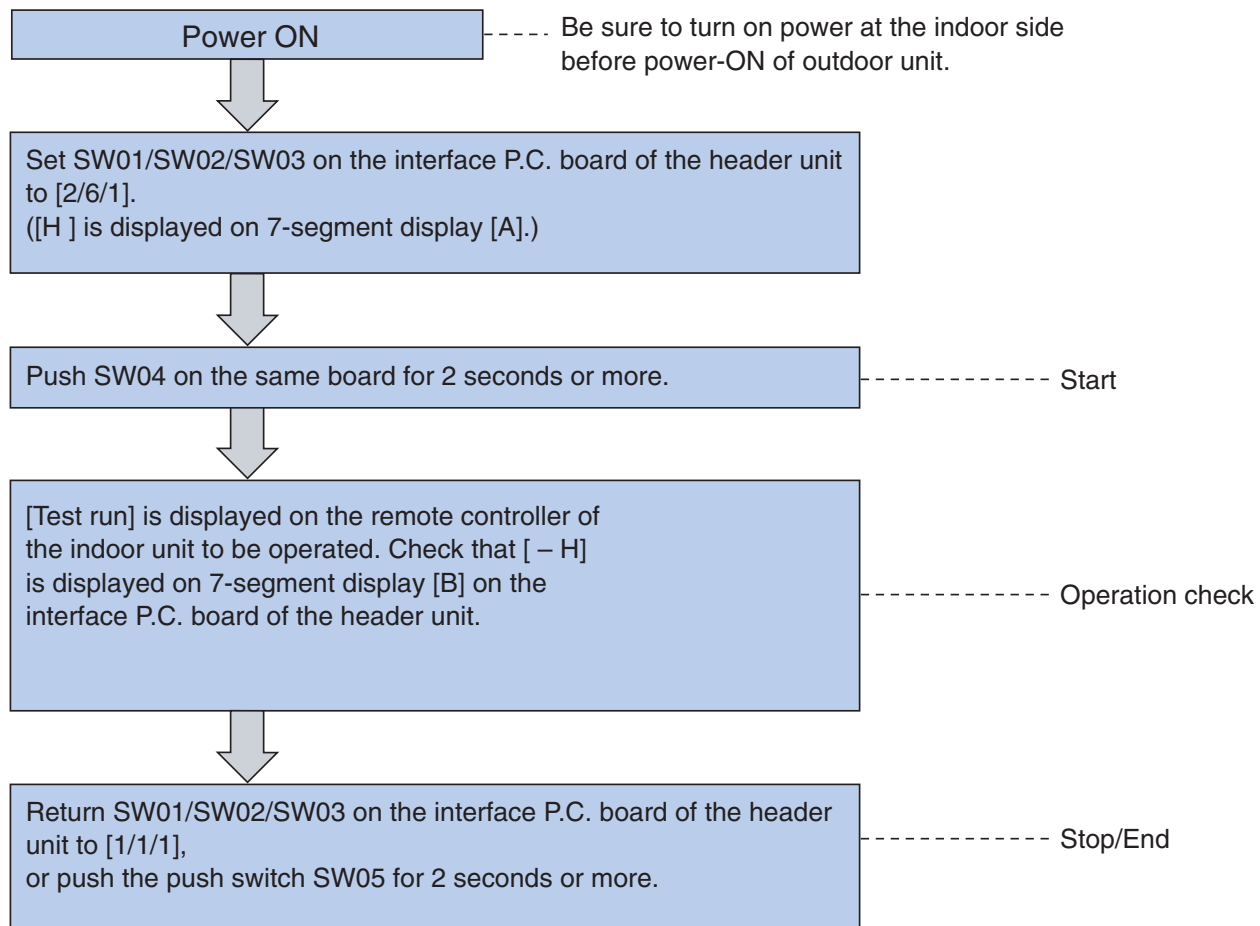


NOTE) The test operation returns to the normal operation after 60 minutes.

(2) Single heating test operation function

This function is provided to change collectively the mode of all the indoor units connected to the same system for the heating test operation mode, by using switches on the interface P.C. board of the header unit.

<Operation procedure>

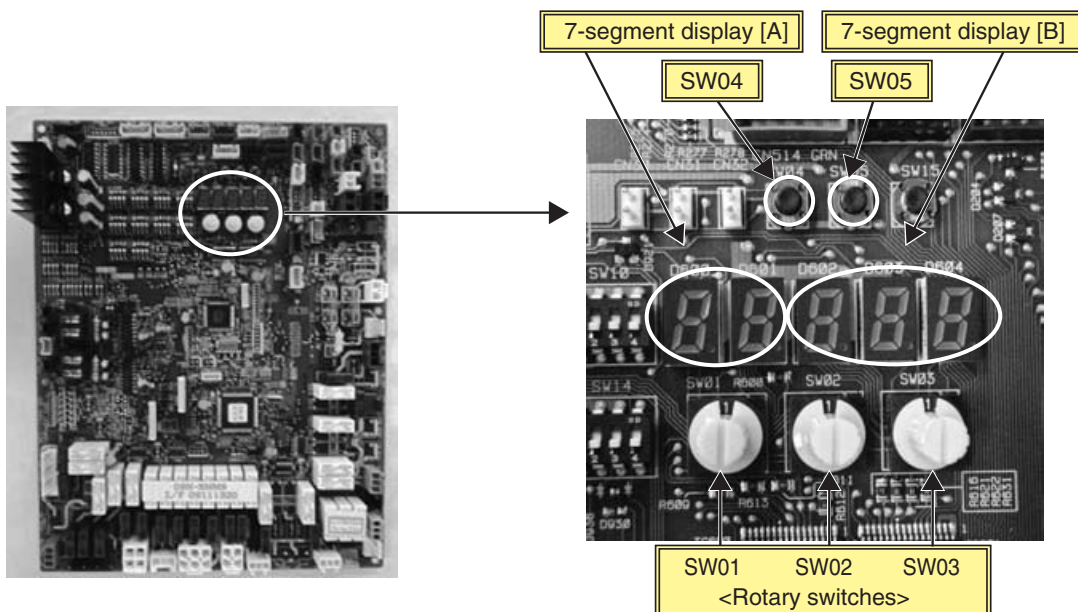
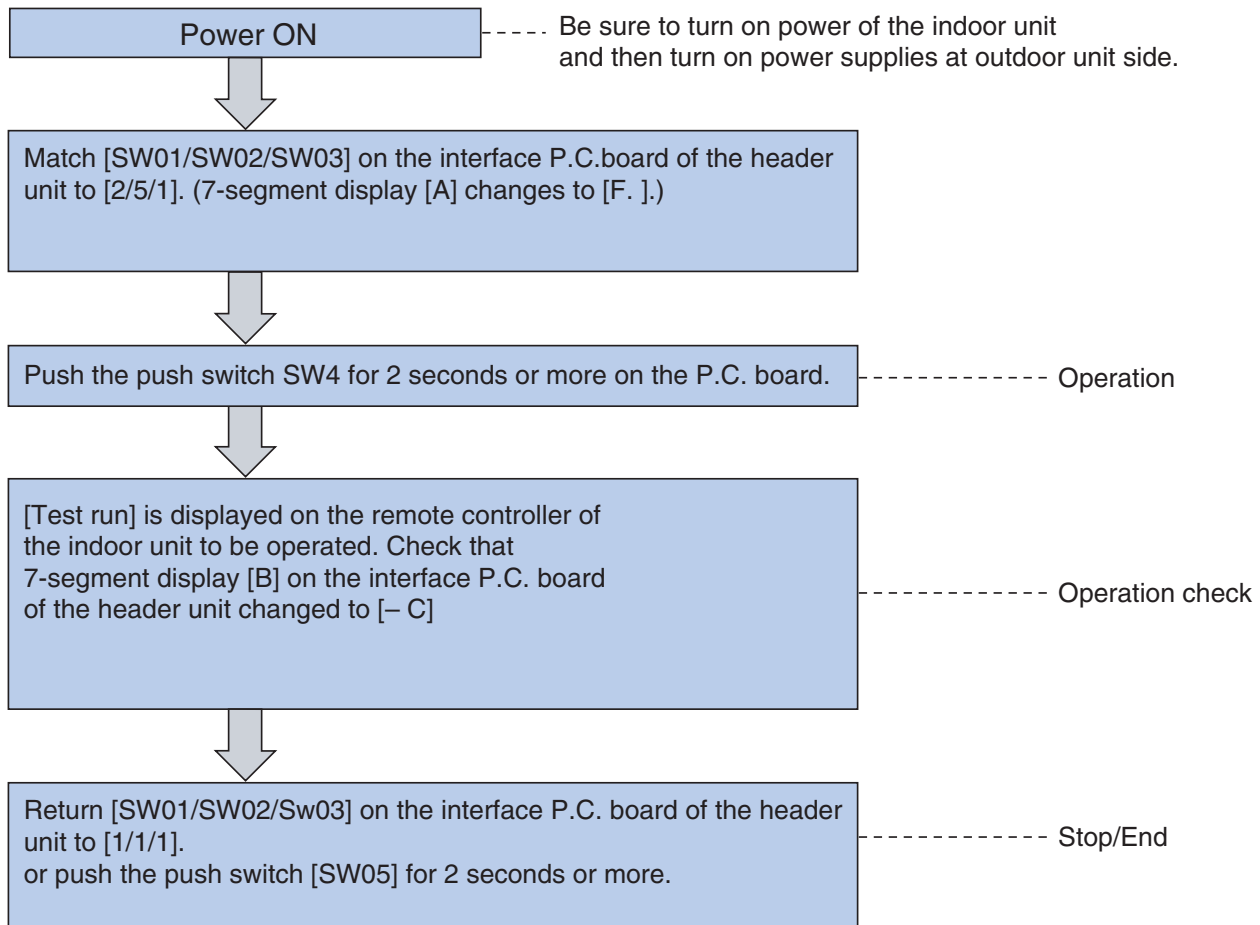


NOTE) The test operation returns to the normal operation after 60 minutes.

(3) Single fan test operation function

This function is provided to change collectively the mode of all the indoor units connected to the same system for the fan test operation mode by using switches on the interface P.C. board of the header unit.

<Operation procedure>

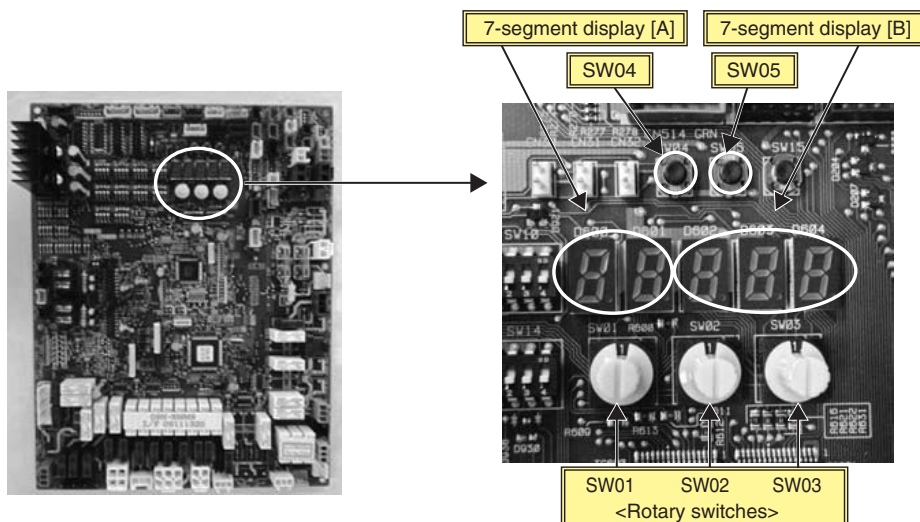
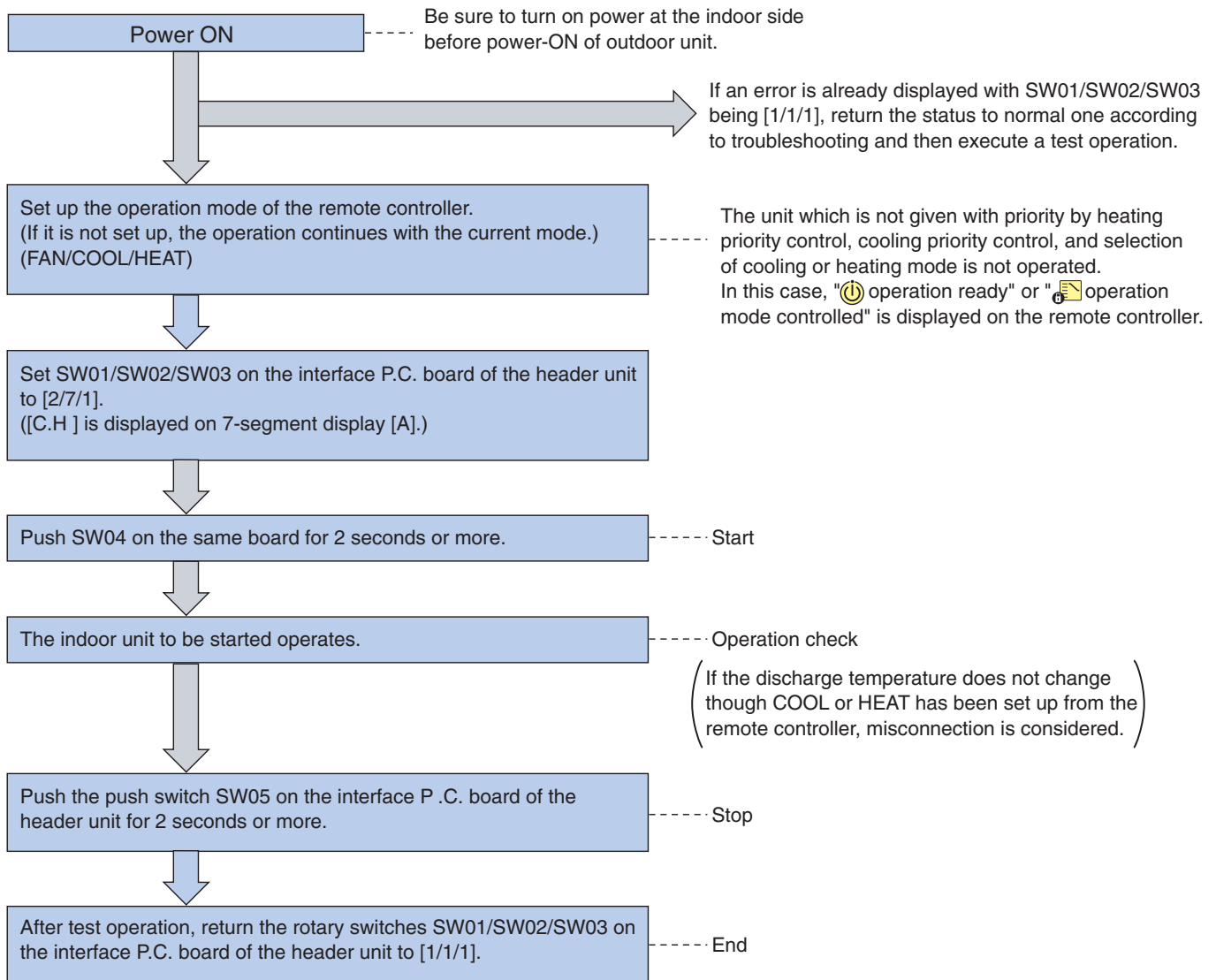


NOTE) The test operation ends after 60 minutes and the operation returns to normal status.

(4) Batch start/stop (ON/OFF) function

This function is provided to start/stop collectively all the indoor units connected to the same system by using switches on the interface P.C. board of the header unit.

<Operation procedure>



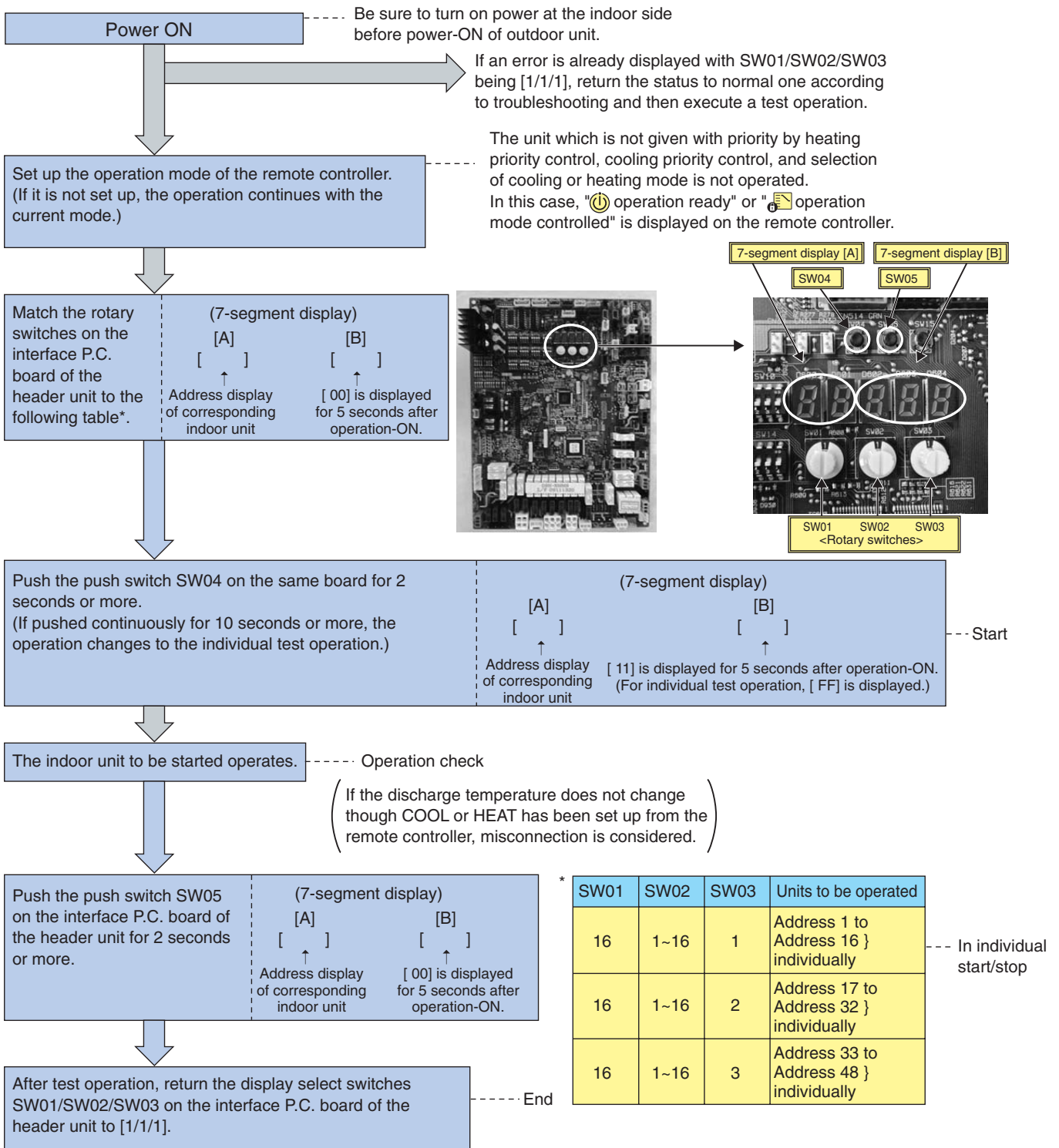
(5) Individual start/stop (ON/OFF) individual test operation function

This function is provided to start/stop (ON/OFF) individually each indoor unit connected to the same system by using switches on the interface P.C. board of the header unit.

Set **SW01** [16] and set **SW02**, **SW03** to indoor address No. (1 to 48) to be started (Refer to the following table*) - only the setup indoor unit starts operation.

(In the rotary switches of the indoor unit which operates in a group by the remote controller, the follower unit cannot be individually started or stopped. In this case, [- -] is displayed on 7-segment display [B] on the interface P.C. board of the header unit.)

<Operation procedure>



NOTE) The individual test operation returns to the normal operation after 60 minutes.

125 Backup Operation <SMMS>

When a trouble occurred at an outdoor unit or at one of the compressors in outdoor unit, the troubled unit or troubled compressor stops and a backup operation (emergency operation) is available by other outdoor units and the compressors.

Set up a backup operation following to the procedure below.

Before Backup Operation

Method of the backup operation differs by the contents of the trouble. Refer to the following table.

| Trouble contents | Backup operation method | Setup procedure |
|--|---|---------------------|
| When a trouble occurred on one of the compressors in the same unit (Note 1) | Compressor backup | To item 2 |
| When troubles occurred on the both compressors in the same unit Trouble of compressor coil (Such as defect of compressor coil) | Outdoor unit backup or outdoor unit backup during cooling season (Note 2) | To item 3 or item 4 |
| When a trouble occurred on refrigerating system parts, fan system parts, or electric system parts | | |
| When a trouble occurred on temperature sensor or pressure sensor | | |

- Note 1)** When a trouble of compressor coil, etc occurred, deterioration of the oil is heavy. Therefore do not perform a backup operation; otherwise a trouble of the other outdoor units may be caused.
- Note 2)** The outdoor unit to be processed with a backup operation should be restricted to one unit in the system of 1 system.

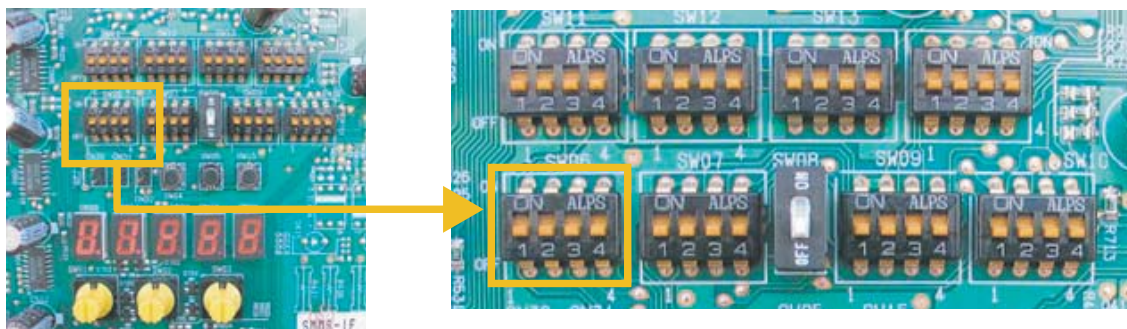
Compressor Backup Setup

<Outline>

When a trouble occurred on one of the two compressors, follow the procedure below if it is necessary to perform a backup operation by the other normal compressor.

<Work procedure>

1. Turn off the main power supplies of all the units connected to the system.
2. Set up the switch **SW06** on the interface P.C. board of the outdoor unit with failure compressor as shown below.



| | SW06 | | | |
|--|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Initial setup at shipment from factory | OFF | OFF | OFF | OFF |
| No.1 compressor (Left side) is defective. | ON | OFF | OFF | OFF |
| No.2 compressor (Right front side) is defective. | OFF | ON | OFF | OFF |

3. Turn on the main power supplies of all the units connected to the system. Then setup operation for the compressor backup finishes.

Outdoor Unit Backup Setup

<Outline>

Against a case that a trouble occurs on the outdoor unit, backup operation can be set up to either header unit or follower unit. For the multiple outdoor unit system (Failure of compressor coil), perform an outdoor unit backup operation if the following error modes occurred.

- Trouble on compressor
- Trouble on pressure sensor (Pd, Ps) /temperature sensor (TD1, TD2, TS1, TE1, TK1, TK2, TK3, TK4, TL)

Note) Backup of the outdoor unit should be restricted to one unit in one system.

1 In case of Trouble on Follower Outdoor Unit (Backup setup for follower outdoor unit)

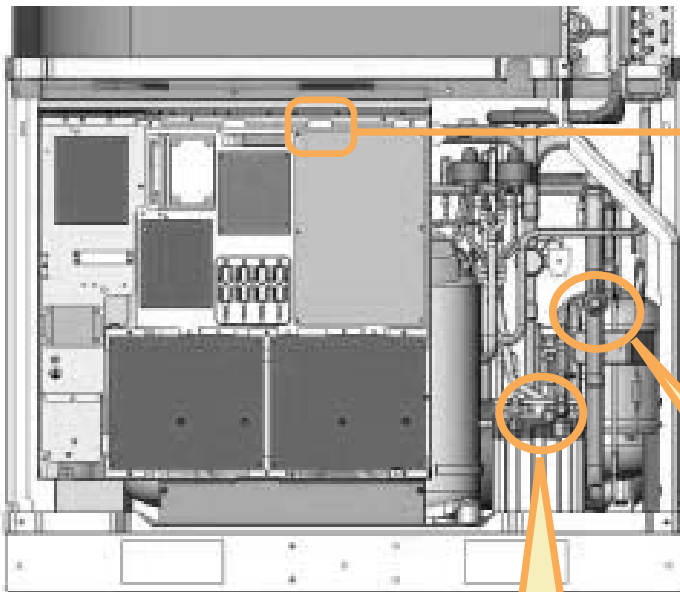
Work procedure

1. Turn off the main power supplies of all the units connected to the system.

[Setup for outdoor unit with trouble]

2. Close fully the gas side service valve of the unit with trouble.
3. Leave service valve of the balance pipe of the liquid pipe opened.
(To prevent refrigerant stagnation in the unit)
However close fully service valve of the liquid pipe when there is PMC leakage in outdoor unit (PMV does not close.).
4. <In case of trouble on the compressor or electric parts system (Compressor, electric system parts, I/F P.C. board, IPDU P.C. board)>
After then, keep OFF for the main power supply of the unit with trouble.
<In case of trouble on the refrigerant circuit parts system (Pressure sensor, temperature sensor, refrigerant circuit parts, fan system parts)>
Remove the communication (BUS2) connector [CN03] between outdoor units on the interface P.C. board.

Setup for outdoor unit with trouble



4. Remove communication connector [CN03] on the interface P.C. board only when a trouble occurred on the refrigerant circuit parts system.

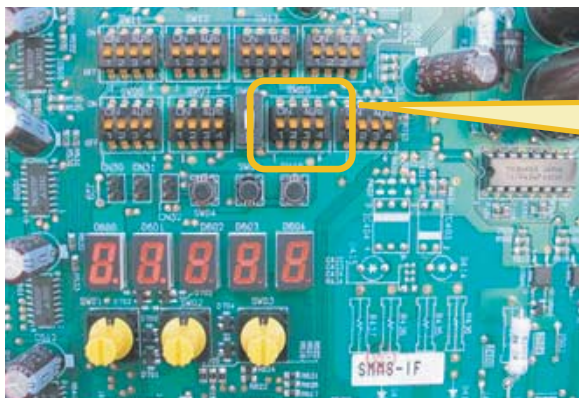
2. Close service valve of gas pipe fully.

3. Service valves of the liquid and the balance pipe are kept opened.
(However close the liquif valve when a leakage occurred on the outdoor PMV.)

[Setup for header unit]

5. Turn on Bit 2 of the Dip SW09 on the interface P.C. board of the header unit. (Setup not to detect the indoor capacity over)
6. Turn on the power supplies of all the units other than the unit with trouble. As for power supply of the unit with trouble, follow the procedure below.
 - <In case of trouble on the compressor or electric parts system (Compressor, electric system parts, I/F P.C. board, IPDU P.C. board)>
 - Keep OFF for the main power supply of the unit.
 - <In case of trouble on the refrigerant circuit parts system (Pressure sensor, temperature sensor, refrigerant circuit parts, fan system parts)>
 - Turn on the power supply to protect the compressor. (Case heater ON) (Although [E19] (Outdoor header unit quantity error) is displayed on 7-segment display after turning on the power supply of the unit, it is not a problem because it is only interruption of communication with the header unit.)

Interface P.C. board of the header unit



5. Turn on Bit 2 of Dip SW09.

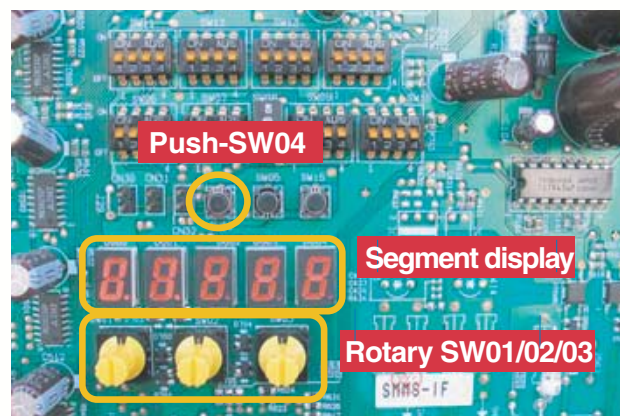
[Setup for the header unit]

7. Error clear is set up from the header unit.
 - 1) Check [U1] [E26] (Decrease of No. of connected outdoor units) is displayed on 7-segment display under condition that the rotary switches SW01/02/03 are set to 1/1/1 on the interface P.C. board.
 - 2) Set the rotary switches SW01/02/03 on the interface P.C. board to 2/16/1, and then push the push SW04 for 5 seconds or more after [Er] [] have been displayed on 7-segment display.
 - 3) [Er] [CL] are displayed on 7-segment display. (Error clear completes.)
 - 4) Return SW01/02/03 to 1/1/1. (It is normal if [U1] [- - -] are displayed.)

All the backup setup for the header unit has completed. Check the operation.

Interface P.C. board of the header unit

- 7
 - Set rotary SW01/02/03 to 1/1/1. [U1] [E26] are displayed.
 - Set rotary SW01/02/03 to 2/16/1. [Er] [] are displayed.
 - Push the push-SW04 for 5 seconds or more. [Er] [CL] are displayed.
 - Return rotary SW01/02/03 to 1/1/1. [U1] [- - -] are displayed.



2 In Case of Trouble on Header Unit (Backup setup for header unit)

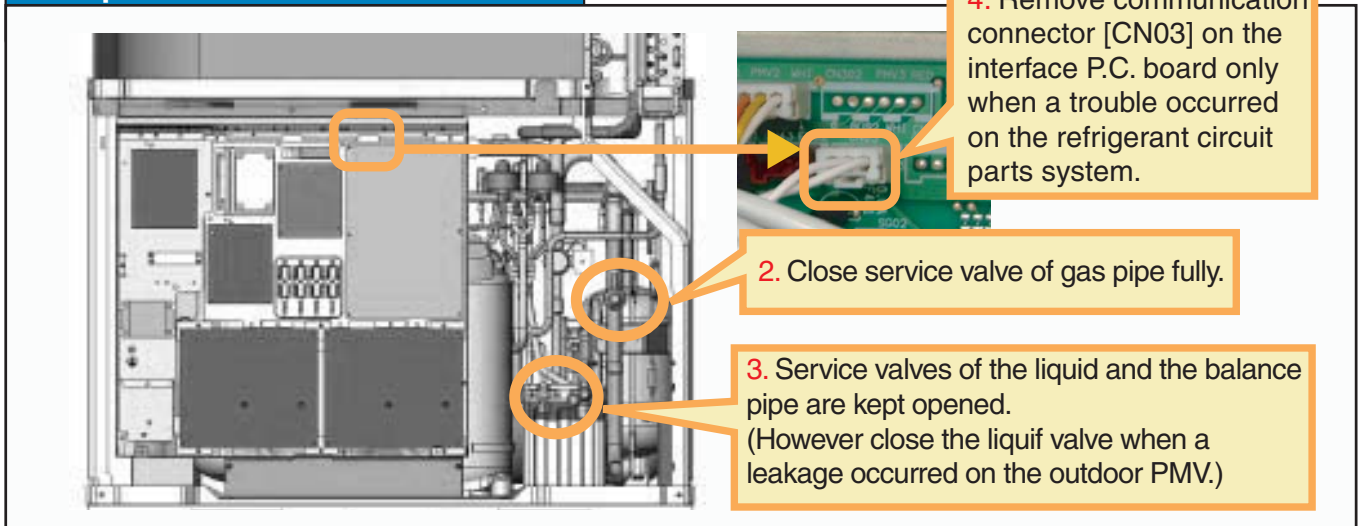
Work procedure

1. Turn off the main power supplies of all the units connected to the system.

[Setup for outdoor unit with trouble]

2. Close fully the gas side service valve of the unit with trouble.
3. Leave service valve of the balance pipe and the liquid pipe fully opened.
(To prevent refrigerant stagnation in the unit)
However close fully service valve of the liquid pipe when there is PMV leakage in outdoor unit (When PMV can not be closed fully)
4. <In case of trouble on the compressor or electric parts system (Compressor, electric system parts, I/F P.C. board, IPDU P.C. board)>
After then, keep OFF for the main power supply of the unit with trouble.
<In case of trouble on the cycle parts system (Pressure sensor, temperature sensor, refrigerat circuit parts, fan system parts)>
Remove the communication (Refrigerant circuit) connector [CN03] between outdoor units on the interface P.C. board.

Setup for outdoor unit with trouble



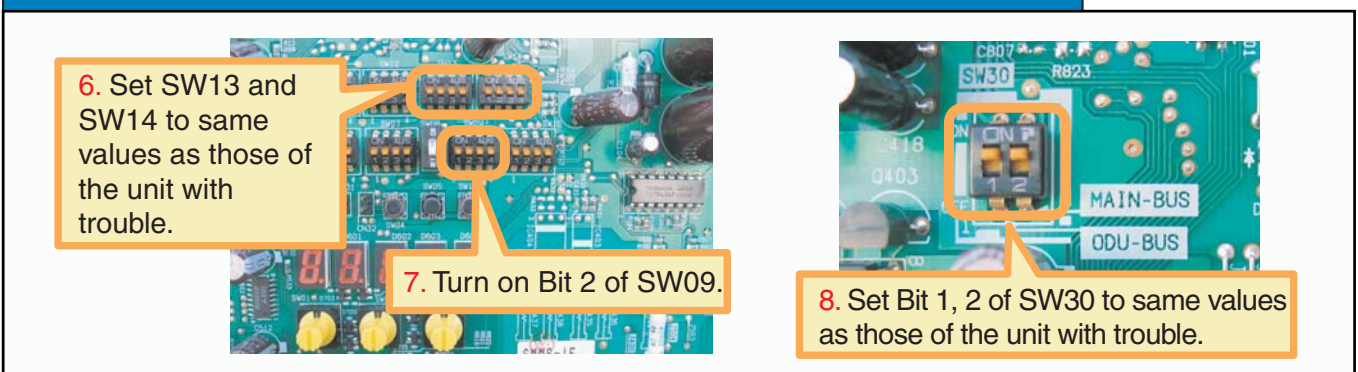
[Selection of header unit]

5. Select a header unit among the follower units based upon the following criteria.
 - If only one follower unit is connected, select it as the header unit.
 - When two or more follower units are connected, select an outdoor unit nearest to the header unit as the header unit.

[Setup for the unit selected as the header unit]

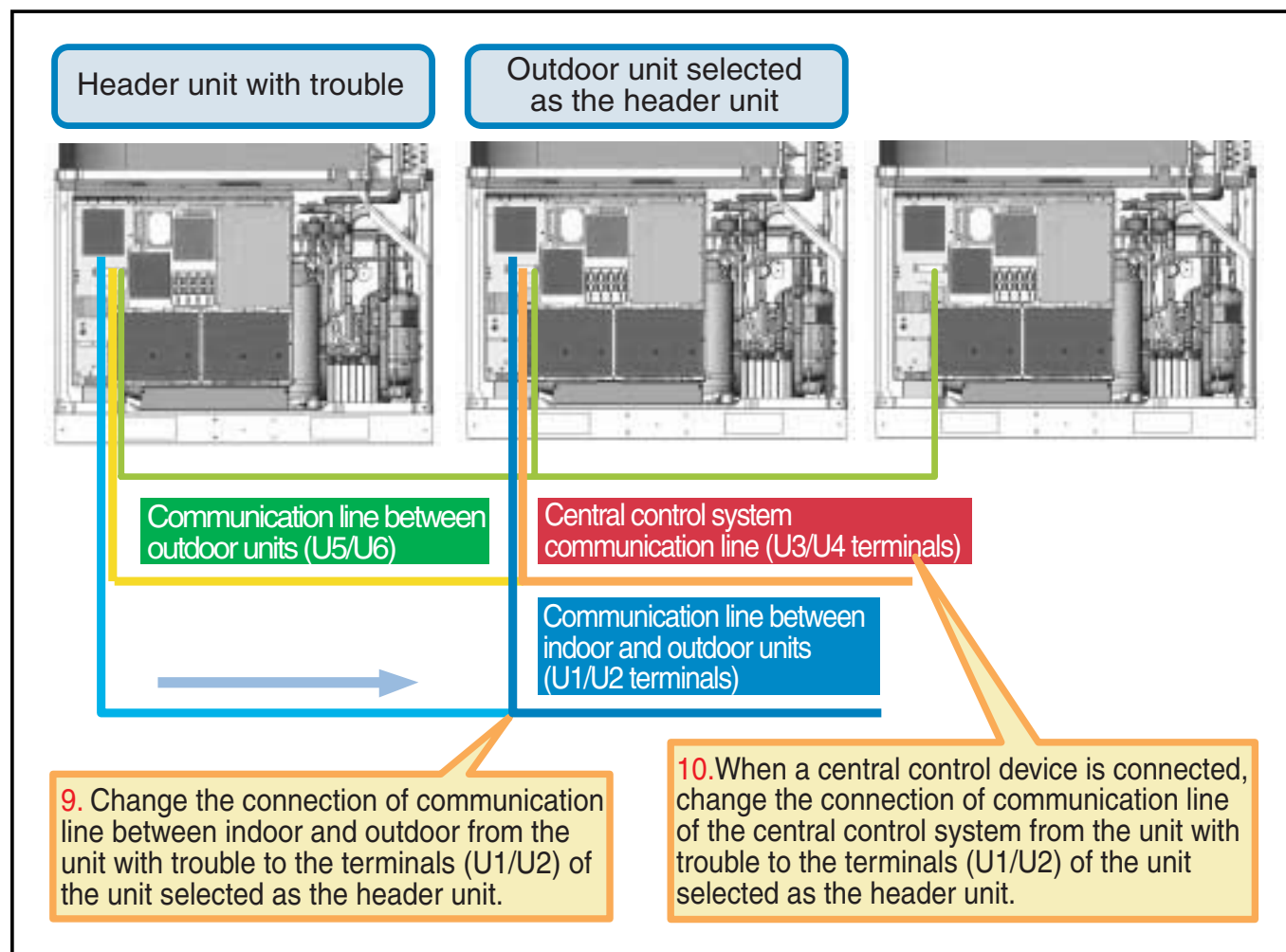
6. Match the setup of SW13 and SW14 on the interface P.C. board with SW setup of the unit with trouble. (Refrigerant system address setup)
7. Turn on Bit 2 of SW09 on the interface P.C. board. (Setup not to detect the indoor capacity over)
8. Match the setup of SW30 Bit 1 and 2 on the interface P.C. board with SW setup of the unit with trouble.

Outdoor interface P.C. board of the unit selected as the header unit



[Connection change of the communication line]

9. Change the communication line between outdoor and indoor from [U1, U2] terminal of the header unit with trouble to [U1/U2] of the unit selected as the header unit.
10. If a central control device is connected, connect the communication line [U3/U4] of the central control system to the communication line [U3/U4] terminal of the unit selected as the header unit, and connect a relay connector between [U1/U2] and [U3/U4] terminals.



11. Turn on the power supplies of each outdoor unit.
 Turn on the main power supplies of all the units other than the unit with trouble.
 As for power supply of the unit with trouble, follow the procedure below.
 Leave the main power supply of the unit with trouble as it is.
 <In case of trouble on the compressor or electric parts system } (Compressor, electric system parts, I/F P.C. board, IPDU P.C. board)>
 Keep OFF for the main power supply of the unit.
 <In case of trouble on the refrigerant circuit parts system (Pressure sensor, temperature sensor, refrigerant circuit parts, fan system parts)>
 Turn on the main power supply to protect the compressor. (Case heater ON) (Although [E19] (Outdoor header unit quantity error) is displayed on 7-segment display after turning on the power supply of the unit, it is not a problem because it is only interruption of communication with the header unit.)
 Then all the backup setup for the header unit has finished. Check the operation.

When a trouble occurred at an outdoor unit or at one of the compressors in outdoor unit, the troubled unit or troubled compressor stops and a backup operation (emergency operation) is available by other outdoor units and the compressors.

Set up a backup operation following to the procedure below.

Before backup operation

Method of the backup operation differs by the contents of the trouble. Refer to the following table.

| Trouble contents | Backup operation method | Setup procedure |
|---|---|---------------------|
| When a trouble occurred on one of the compressors in the same unit (Note 1) | Compressor backup | To item 2 |
| When troubles occurred on the both compressors in the same unit | Outdoor unit backup or outdoor unit backup during cooling season (Note 2) | To item 3 or item 4 |
| Trouble of compressor coil (Such as defect of compressor coil) | | |
| When a trouble occurred on refrigerating system parts, fan system parts, or electric system parts | | |
| When a trouble occurred on temperature sensor or pressure sensor | | |

Note 1) When a trouble of compressor coil, etc occurred, deterioration of the oil is heavy. Therefore do not perform a backup operation; otherwise a trouble of the other outdoor units may be caused.

Note 2) The outdoor unit to be processed with a backup operation should be restricted to one unit in the system of 1 system.

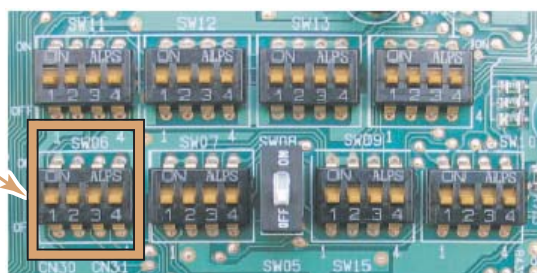
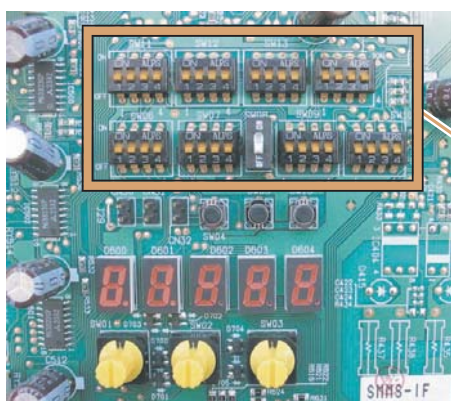
Compressor backup setup

<Outline>

When a trouble occurred on one of the two compressors, follow the procedure below if it is necessary to perform a backup operation by the other normal compressor.

<Work procedure>

1. Turn off the main power supplies of all the units connected to the system.
2. Set up the switch **SW06** on the interface P.C. board of the outdoor unit with failure compressor as shown below.



| | SW06 | | | |
|--|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Initial setup at shipment from factory | OFF | OFF | OFF | OFF |
| No.1 compressor (Left side) is defective. | ON | OFF | OFF | OFF |
| No.2 compressor (Right front side) is defective. | OFF | ON | OFF | OFF |

3. Turn on the main power supplies of all the units connected to the system. Then setup operation for the compressor backup finishes.

Backup setup for outdoor unit

<Outline>

In this model, setup of the backup operation is available in either header unit or follower unit against a case that the outdoor units are defective. In a system in which two or more outdoor units are connected, carry out the backup operation of the outdoor unit if the error modes described below occurred.

- Compressor error (Rare short error or when even one compressor cannot operate, etc.)
- Pressure sensor (Pd, Ps) / Temperature sensor (TD1, TD2, TS1, TE1, TK1, TK2, TK3, TK4, TL) error
However the outdoor unit which is processed with backup operation is restricted to only one unit in 1 system.

<Work procedure>

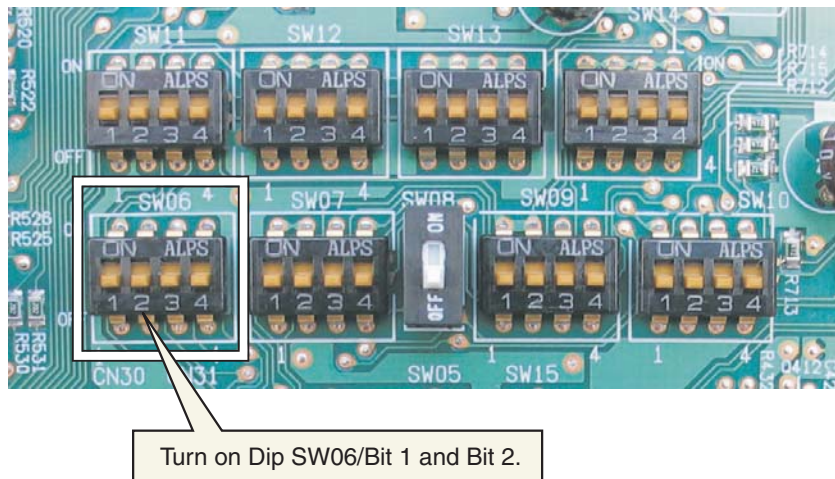
1. Turn off the main power supplies of all the units connected to the system.

[Setup for the defective outdoor unit]

(The following work is common to header unit and follower unit which have been defective.)

2. Turn on both Dip SW06 Bit 1 and Bit 2 on I/F P.C. board.
3. Close fully service valve of the liquid pipe if there is leak (Not close) error of outdoor PMV.
4. Turn on the main power supplies of all the units connected to the system.
When the error is the compressor insulation error or etc, remove the lead wire of the compressor before power-ON.

Then the backup setup of the outdoor unit is completed.



This product offers backup modes of operation to get over certain emergency situations. If a fault occurs in one of the compressors, it is possible to operate the system on an emergency basis by operating only the remaining compressor(s), (compressor backup operation).

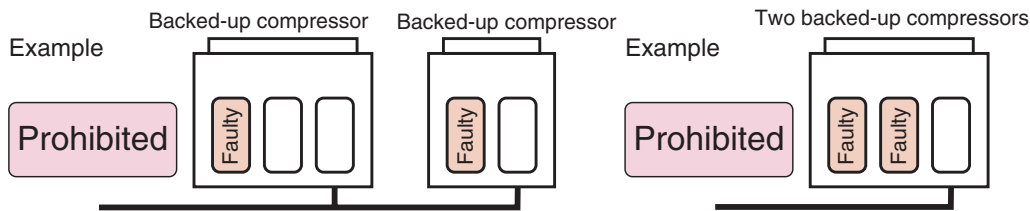
If one of the outdoor units fails in a combined outdoor unit system, the system can be operated on an emergency basis by keeping only the remaining outdoor unit(s), (outdoor unit backup operation).
 Perform backup operation setting in accordance with the procedure described below.

Note for Backup Operation

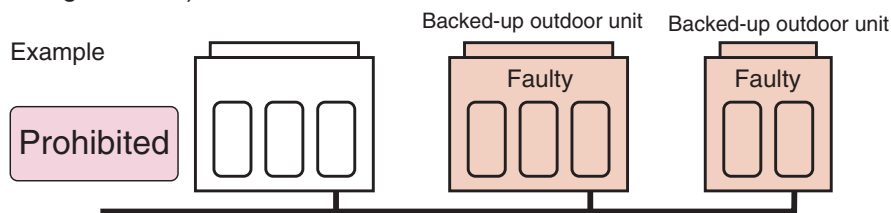
The method of backup operation differs according to the contents of fault as shown in the table below.

Note 1) If the compressor has failed due to a fault in its motor coil (e.g. a layer short-circuit), do not perform compressor backup operation because of severe oil degradation. It could damage other outdoor units.

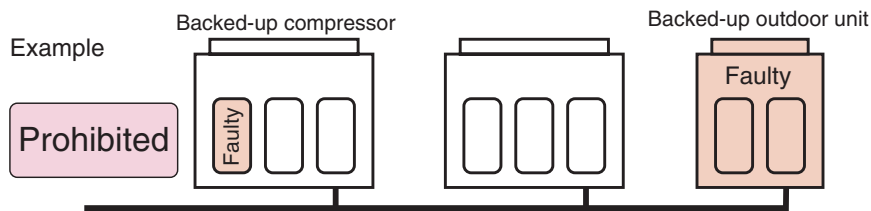
Note 2) Keep the number of backed-up outdoor units under compressor backup operation to one in the system (single refrigerant line).
 For a three-compressor model, the backing up of two faulty compressors is prohibited.



Note 3) Keep the number of backed-up outdoor units under outdoor unit backup operation to one in the system (single refrigerant line).

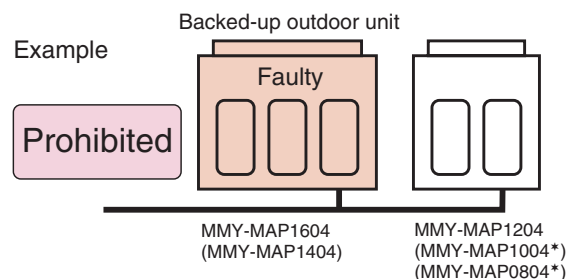


Note 4) It is prohibited to combine compressor backup operation and outdoor unit backup operation.



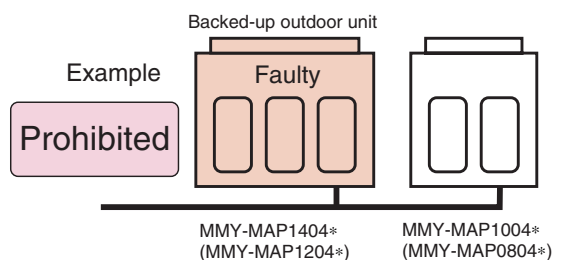
<SMMS-i>

Note 5) With a two-outdoor unit system containing an MMYMAP1604* (or MAP1404*) and an MMY-MAP1204* (or MMY-MAP0804* or MAP1004*), do not perform outdoor unit backup operation to back up the MMY-MAP1604* (or MAP1404*). It could lead to compressor failure due to the abnormal operation.



<SHRM-i>

Note 5) With a two-outdoor unit system containing an MMYMAP1404* (or MAP1204*) and an MMYMAP1004* (or MMY-MAP0804*), do not perform outdoor unit backup operation to back up the MMY-MAP1404* (or MAP1204*). It could lead to compressor failure due to the abnormal operation.



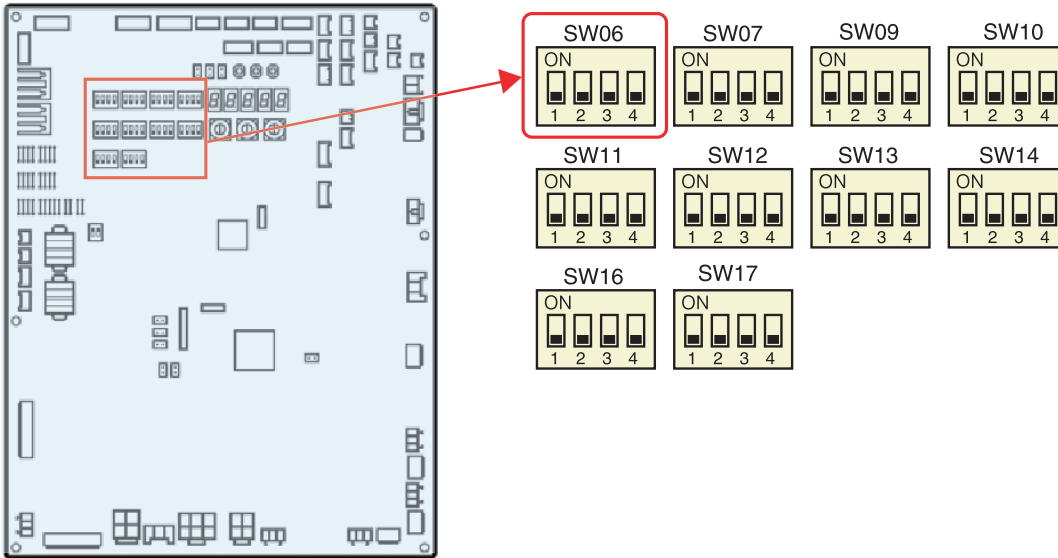
Compressor Backup Operation Setting

<Outline>

If a fault occurs to one of the compressors installed in outdoor unit, follow the procedure described below to back up the faulty compressor by using the remaining, normal compressor(s).

<Work Procedure>

- Turn off the power supply to all the outdoor units connected to the system.
- Set the DIP switches of **SW06**, provided on the interface P.C. board of the outdoor unit with the faulty compressor, as shown in the table below.



| Three-compressor model | SW06 | | | |
|--|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Factory default setting | OFF | OFF | OFF | OFF |
| When compressor No. 1 (front left) is faulty | ON | OFF | OFF | OFF |
| When compressor No. 2 (front center) is faulty | OFF | ON | OFF | OFF |
| When compressor No. 3 (front right) is faulty | OFF | OFF | ON | OFF |

| Two-compressor model | SW06 | | | |
|--|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Factory default setting | OFF | OFF | OFF | OFF |
| When compressor No.1 (front left) is faulty | ON | OFF | OFF | OFF |
| When compressor No.2 (front right) is faulty | OFF | ON | OFF | OFF |

- Turn on the power supply to all the units connected to the system.

This is the end of compressor backup operation setting.

Backup Setup for Outdoor Unit

<Outline>

In this model, setup of the backup operation is available in either the header unit or the follower unit in a situation where the outdoor units are defective. In a system in which two or more outdoor units are connected, carry out the backup operation on the outdoor unit if the error modes described below occur.

- Compressor error (Rare short error or when one compressor cannot operate, etc.)
 - Pressure sensor (Pd, Ps) / Temperature sensor (TD1, TD2, TD3, TS1, TS2, TE1, TE2, TK1, TK2, TK3, TK4, TK5, TL) error
- Note only one outdoor unit within a given system can be subjected to the backup procedure.

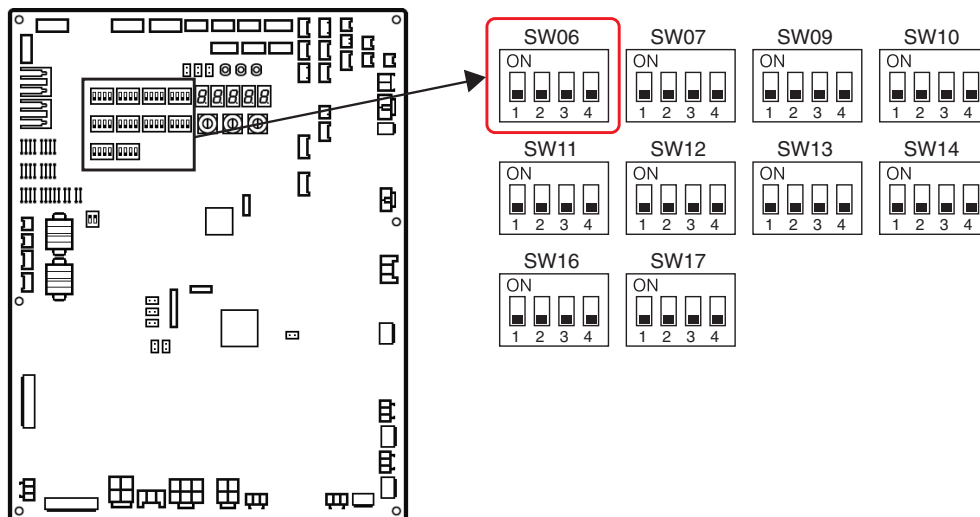
<Procedure>

(1) Turn off the main power supplies to all the units connected to the system.

[Set up procedure for the malfunctioning outdoor unit]

(The following work is common to the header unit and follower units in the system.)

(2) Set the DIP switches of **SW06**, provided on the interface P.C. board of the outdoor unit with the faulty compressor, as shown in the table below.



| Three-compressor model | SW06 | | | |
|-------------------------|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Factory default setting | OFF | OFF | OFF | OFF |
| Outdoor unit backup | ON | ON | ON | OFF |

| Two-compressor model | SW06 | | | |
|-------------------------|-------|-------|-------|-------|
| | Bit 1 | Bit 2 | Bit 3 | Bit 4 |
| Factory default setting | OFF | OFF | OFF | OFF |
| Outdoor unit backup | ON | ON | OFF | OFF |

(3) When there is leakage of outdoor PMV (does not close) or a trouble, close the liquid valve service valves fully.

(4) Turn on the power supply to all the units connected to the system.

When a trouble due to insufficient insulation, etc. occurred, remove in advance lead wire of the compressor. This is the end of compressor backup operation setting.

Outdoor Unit Backup Operation Setting

<Outline>

This product allows outdoor unit backup operation setting to be performed either at the header unit or a follower unit. If any of the fault modes specified below occurs to one of the outdoor units in a multi-outdoor unit system, proceed with outdoor unit backup operation.

- A compressor failure
(e.g. a layer short-circuit or a compressor failure in which no compressor is available to back up the faulty compressor)
- A failure of a pressure sensor (Pd or Ps) or a temperature sensor
(TD1, TD2, TD3, TS1, TE1, TE2, TK1, TK2, TK3, TK4, TK5, or TL)

Note) Keep the number of backed-up outdoor units to one in the system (single refrigerant line).

(1) Follower Outdoor Unit Backup Operation Setting (Failure of Follower Outdoor Unit)

<Work procedure>

- (1) Turn off the power supply to all the indoor and outdoor units connected to the system.

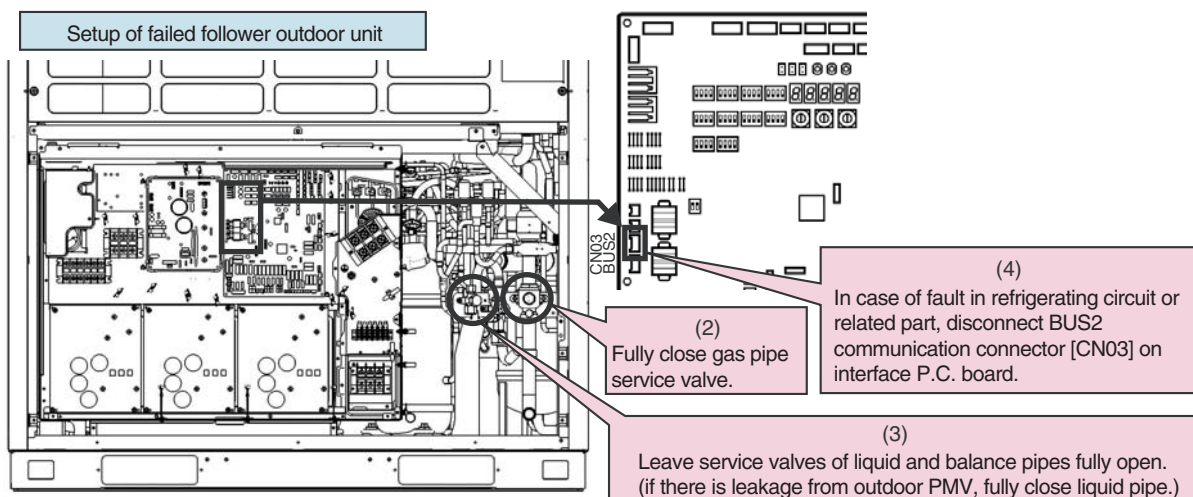
[Setup of failed follower outdoor unit]

- (2) Fully close the gas pipe service valve of the failed outdoor unit.
- (3) Leave the service valves of the liquid and balance pipe fully open (to prevent refrigerant stagnation in the unit). However, if there is a leakage from an outdoor PMV (unable to close), fully close the liquid pipe service valve.
- (4) **<In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>**

From this point on, keep the power supply to the failed unit off.

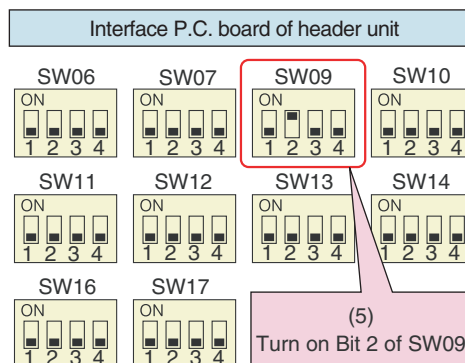
<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Disconnect the connector [CN03] for outdoor-outdoor communication (BUS2) provided on the interface P.C.board.



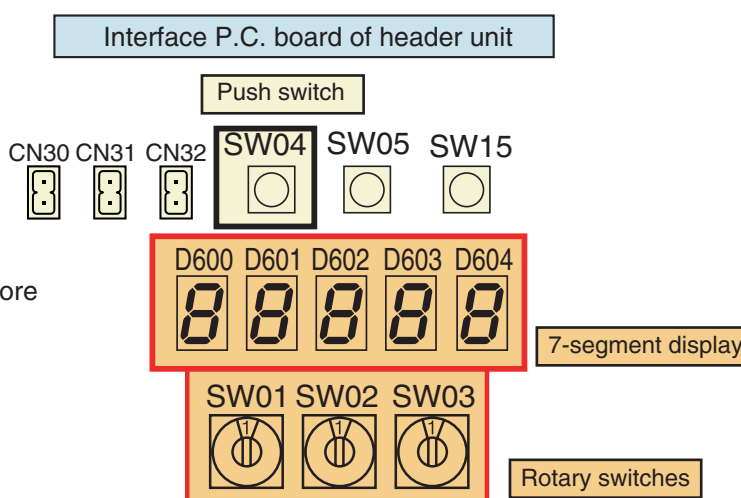
[Setup of header unit]

- (5) Turn on Bit 2 of SW09 on the interface P.C. board of the header unit.
(Setting to prevent connected indoor units capacity over error. (E16))



- (6) Turn on the power supply to all the units connected to the system other than the failed follower unit. Determine what to do with the power supply to the failed follower unit in the following manner.
<In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>
 Leave the power supply off.
<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>
 Turn on the power supply to protect the compressor (by turning on the case heater).
 (When the power supply to the unit is turned on, [E19] (error in the number of outdoor header units) will be displayed on the 7-segment display. However, this will not cause any problems.)
- (7) Perform settings needed to gain permission for backup operation from the header unit (error clearance).
 1) Set SW01/02/03 on the interface P.C. board to 1/1/1 and confirm that [U1] [E26] (dropping out of an outdoor unit) is displayed on the 7-segment display.
 2) Set SW01/02/03 on the interface P.C. board to 2/16/1. Upon confirming that [Er] [... ..] is displayed on the 7-segment display, push SW04 and hold for 5 seconds or more.
 3) [Er] [... CL] (error clearance completed) will be displayed on the 7-segment display.
 4) Set SW01/02/03 back to 1/1/1. (The display should change to [U1] [- - -].)

- (7)
 Set SW01/02/03 to 1/1/1
 [U1] [E26] will be displayed.
 ↓
 Set SW01/02/03 to [2/16/1].
 [Er] [... ..] will be displayed.
 ↓
 Push SW04 and hold for 5 seconds or more
 [Er] [... CL] will be displayed.
 ↓
 Set SW01/02/03 back to 1/1/1.
 [U1] [- - -] will be displayed.



This is the end of follower outdoor unit backup operation setting. Check the operation.

(2) Header Outdoor Unit Backup Operation Setting (Failure of Header Outdoor Unit)

<Work procedure>

(1) Turn off the power supply to all the units connected to the system at the source.

[Setup of failed header outdoor unit]

(2) Fully close the gas pipe service valve of the failed outdoor unit.

(3) Leave the service valves of the liquid and balance pipes fully open (to prevent refrigerant stagnation in the failed outdoor unit).

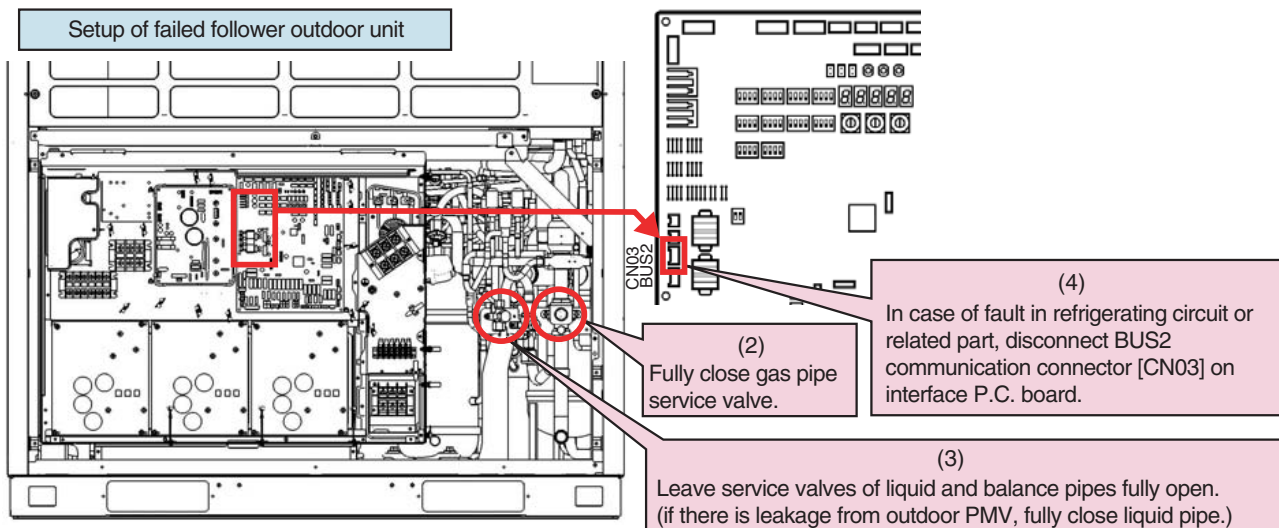
However, if there is a leakage from an outdoor PMV (unable to close), fully close the liquid pipe service valve.

(4) **<In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>**

From this point on, keep the power supply to the failed unit off.

<In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>

Disconnect the connector [CN03] for outdoor-outdoor communication (BUS2) provided on the interface P.C.board.



[Selection of new header unit]

(5) Select a new header unit from the follower units on the basis of the following criteria:

- If only one follower unit is connected, select it as the header unit.
- If two or more follower units are connected, select the follower unit that is nearest to the failed header unit.

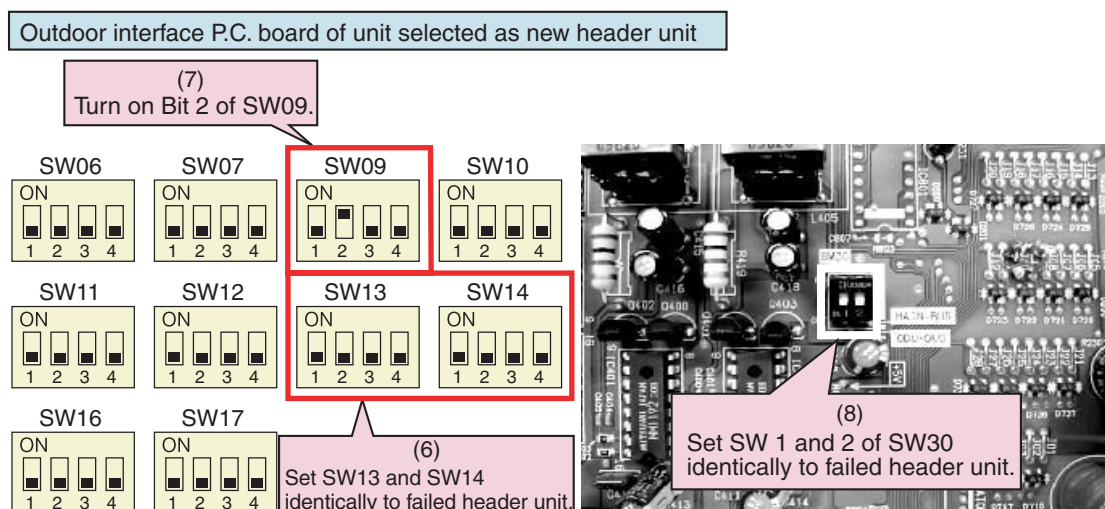
[Setup of new header unit]

(6) Set SW13 and SW14 on the interface P.C. board same as the setting of failed header unit (refrigerant line address setting).

(7) Turn on Bit 2 of SW09 on the interface P.C. board.

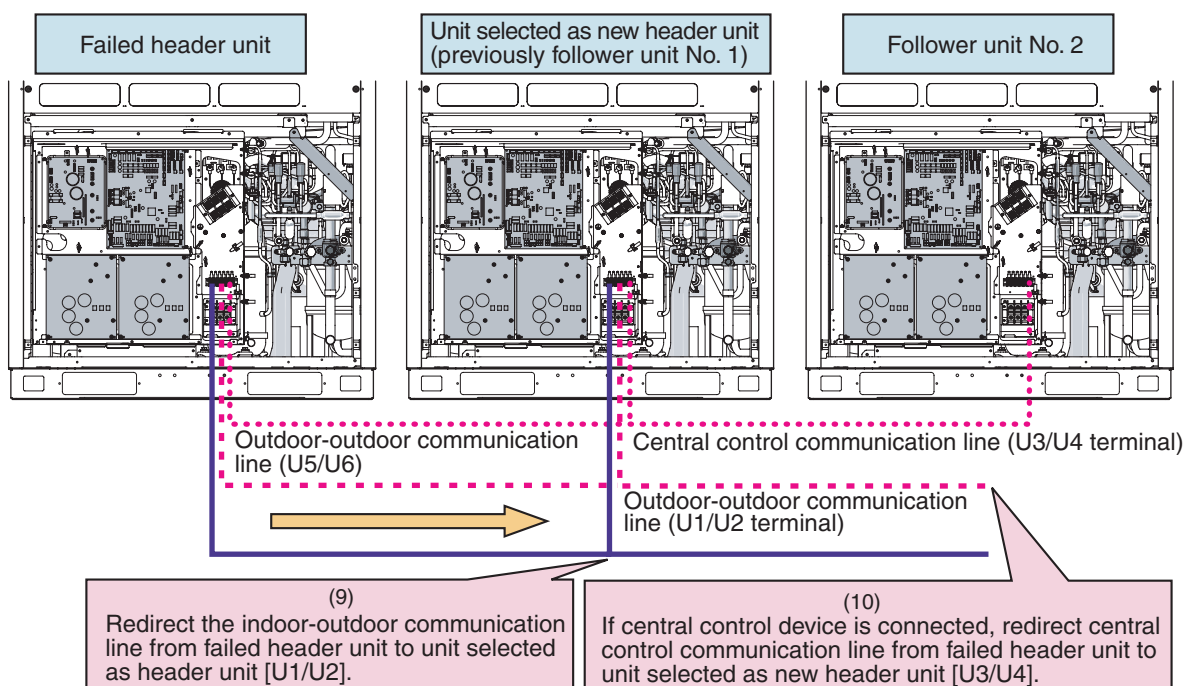
(Setting to prevent connected indoor unit capacity over error. (E16))

- (8) Set Bits 1 and 2 of **SW30** on the interface P.C. board same as that of the failed header unit (terminator resistance setting).



[Wiring changes to communication line]

- (9) Redirect the indoor-outdoor communication line connected to the failed header unit [**U1/U2**] to the unit selected as the header unit [**U1/U2**].
- (10) If a central control device is connected, connect the central control communication line [**U3/U4**] to the communication line terminal of the unit selected as the new header unit [**U3/U4**], and connect up the tie connector between the [**U1/U2**] and [**U3/U4**] terminals.



- (11) Turn on the power supply to all the units connected to the system other than the failed unit. Determine what to do with the power supply to the failed unit in the following manner.
- <In case of fault in compressor, electrical part, I/F P.C. board, or IPDU P.C. board>
Leave the power supply off.
- <In case of fault in refrigerating circuit or related part (pressure sensor, temperature sensor, refrigerating cycle part, or fan system part)>
Turn on the power supply to protect the compressor (by turning on the case heater).
(When the power supply to the unit is turned on, [E19] (error in the number of outdoor header units) will be displayed on the 7-segment display. However, this will not cause any problems.)

This is the end of header outdoor unit backup operation setting. Check the operation.

Refrigerant Recovery from Failed Outdoor Unit (Pump-Down)

This product supports refrigerant pump-down, a function which allows refrigerant to be recovered from an outdoor unit in need of repair using a normal outdoor unit in a system featuring multiple outdoor units.

(1) Note for Refrigerant Recovery Operation

When performing pump-down operation, take note of the following matters:

- Note 1)** The pump-down refrigerant recovery rate changes with outside temperature and other factors. After pump-down is completed, recover any residual gas using a refrigerant recovery device, etc., and be sure to measure the amount of recovered refrigerant. (The refrigerant recovery rate can be improved by heating the accumulator of the outdoor unit to be repaired during pump-down operation.)
- Note 2)** If pump-down has been performed, the system cannot be operated until the faulty outdoor unit is repaired.
(Continued operation would be impossible due to a refrigerant overcharge.)
- Note 3)** If outdoor PMVs 1 and 2 both happen to be faulty (unable to open) or PMV 4 fails while fully closed, the refrigerant in the heat exchangers (or sub-heat exchangers) cannot be recovered. In that case, recover any residual gas in the heat exchangers (or sub-heat exchangers) using a tube piercing valve or some other tool. After a pumpdown operation, do not perform any welding until the residual gas in the heat exchangers is recovered.

(2) Refrigerant Recovery Procedure A (Case of No Outdoor Unit Backup Operation Setting)**<Work procedure>**

Turn on the power supply to the system at the source, but leave the system switched off.

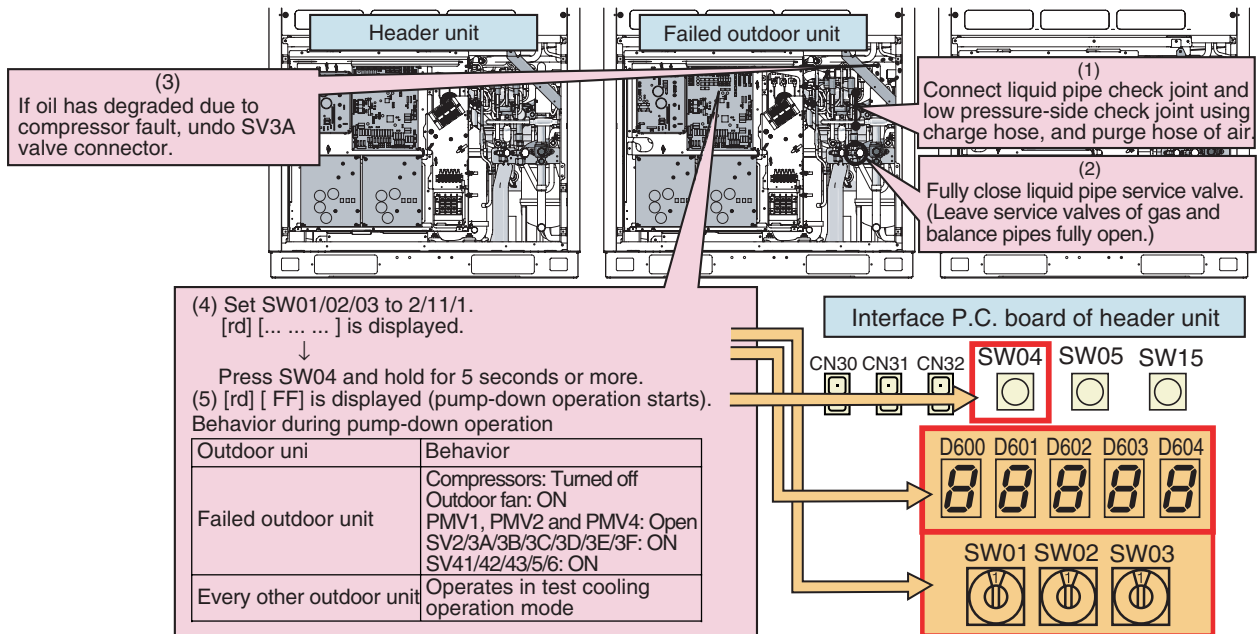
If the fault involves poor insulation of a compressor motor, remove the motor leads before the power is turned on.

[Setup of failed outdoor unit]

- (1) Connect the check joint of liquid pipe and the low pressure-side check joint using a charge hose, and purge the hose of air (to recover refrigerant from the liquid tank and heat exchangers).
- (2) Fully close the liquid pipe service valve of the failed outdoor unit.
(Leave the service valves of the gas and balance pipes fully open.)
- (3) If the oil is likely to have degraded due to a compressor fault, disconnect the **SV3A** valve connector of the failed outdoor unit (to prevent the degraded oil from flowing into other outdoor units).
- (4) Set **SW01/02/03** on the interface P.C. board of the failed outdoor unit to **2/11/1**.
After **[rd] [... ..]** is displayed on the 7-segment display, push **SW04** and hold for 5 seconds or more.

(5) [rd] [... FF] will be displayed on the 7-segment display, and pump-down operation will start.

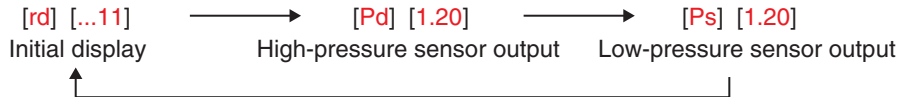
* To put the operation on hold midway, turn off the power supply to all the outdoor units, or push **SW05** on the interface P.C. board.



(6) Approx. 10 minutes after the system starts up, fully close the gas pipe service valve of the failed outdoor unit.

(7) Push **SW04** of the failed outdoor unit to have pressure data (MPa) displayed.
(The display switches each time SW04 is pushed.)

Display Example



[Selection of outdoor unit for pressure adjustment]

(8) Of all outdoor units operating in the pump-down mode, select the one with the lowest unit No. as an outdoor unit for pressure adjustment.

Identifying Unit No.

The unit No. is the number displayed on the 7-segment display when **SW01/02/03** are set to 1/1/1.

([U#] [...]): # represents the unit No.)

[Setup of outdoor units other than unit for pressure adjustment and failed unit]

(9) Leaving the balance pipes of the unit for pressure adjustment and the failed unit fully open, fully close the balance pipe service valves of all other outdoor units.

[Setup of outdoor unit for pressure adjustment]

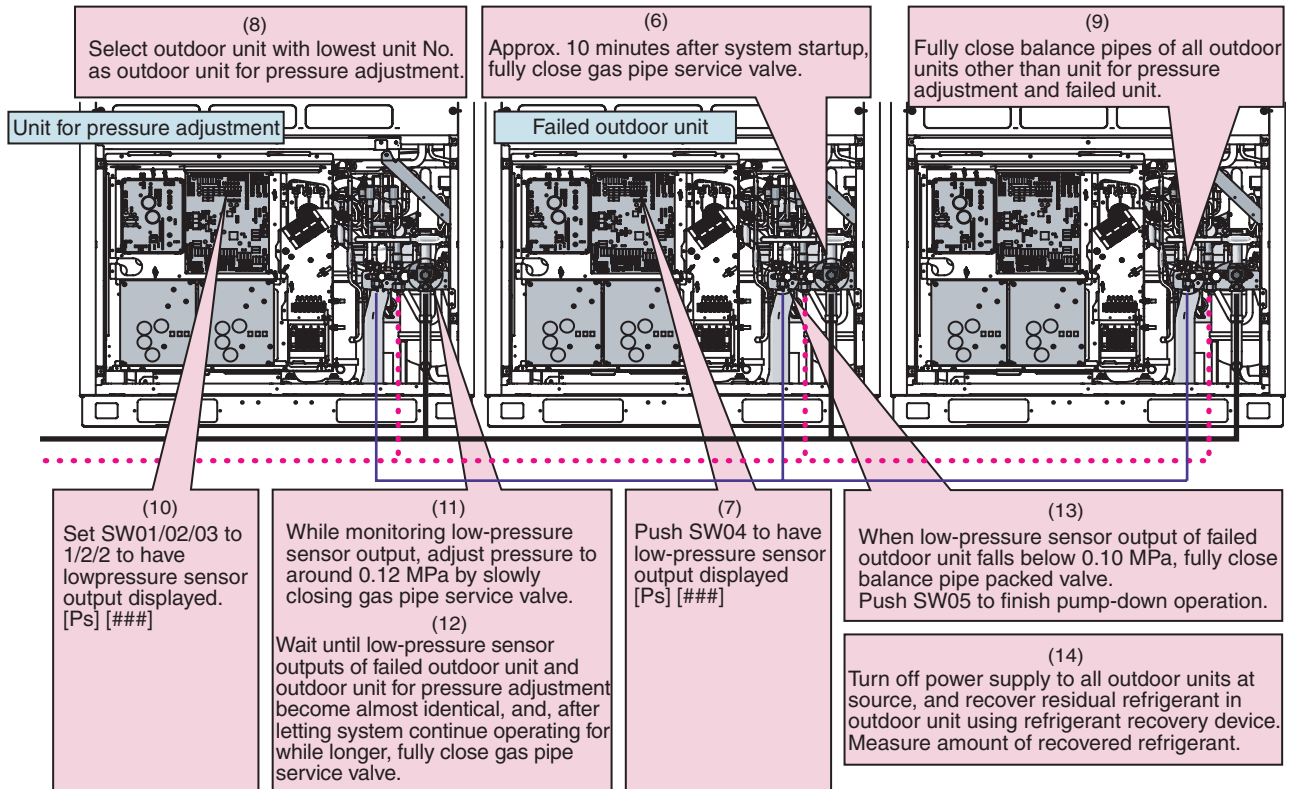
(10) Set **SW01/02/03** on the interface P.C. board of the outdoor unit for pressure adjustment to 1/2/2.

(11) As the low-pressure sensor output is displayed on the 7-segment display, adjust the pressure to around 0.12 MPa by slowly closing the gas pipe service valve, with checking pressure data.

(12) Compare the low-pressure sensor outputs of the failed unit with that of the unit for pressure adjustment, and wait until the two pressure readings become almost the same. After letting the system continue operating for a while longer, fully close the gas pipe service valve of the unit for pressure adjustment.

[Setup of failed outdoor unit]

- (13) When the low-pressure sensor output of the failed outdoor unit falls below 0.10MPa, fully close the balance pipe packed valve, and push **SW05** on the interface P.C. board to finish the pump-down operation.
- (14) Turn off the power supply to all the outdoor units, and recover the residual refrigerant in the outdoor unit using a refrigerant recovery device.
Be sure to measure the amount of recovered refrigerant.
(This is necessary to determine how much additional refrigerant will be needed after the completion of the repair.)



This is the end of the refrigerant recovery operation.

Set **SW01/02/03** of the failed outdoor unit and the outdoor unit for pressure adjustment back to **1/1/1**.

(3) Refrigerant Recovery Procedure B (Case of Outdoor Unit Backup Operation Setting)

<Outline>

If outdoor unit backup operation setting is performed, **use an alternative refrigerant recovery procedure as described below, provided that the power cannot be turned on for the failed outdoor unit.**

(Refrigerant will be recovered from the failed outdoor unit using the test cooling operation function.)

Note 1) If cooling-season outdoor unit backup operation or outdoor unit backup operation is in progress with the power supply to the failed outdoor unit turned on, follow the procedure described in “(2) Refrigerant recovery procedure A (Case of no outdoor unit backup operation setting)”.

If outdoor unit backup operation setting is performed with the power supply to the failed outdoor unit turned on, recovery operation can only start after putting the outdoor-outdoor communication connector on the interface P.C.board of that unit [CN03] back to its initial state and resetting the power supply.

Note 2) If the power cannot be turned on the failed outdoor unit, the solenoid valves and PMVs of the unit cannot be turned on, so that it reduces the amount of recovered refrigerant compared to a standard pump-down operation.

Recover the residual gas in the unit using a refrigerant recovery device, and be sure to measure the amount of recovered refrigerant.

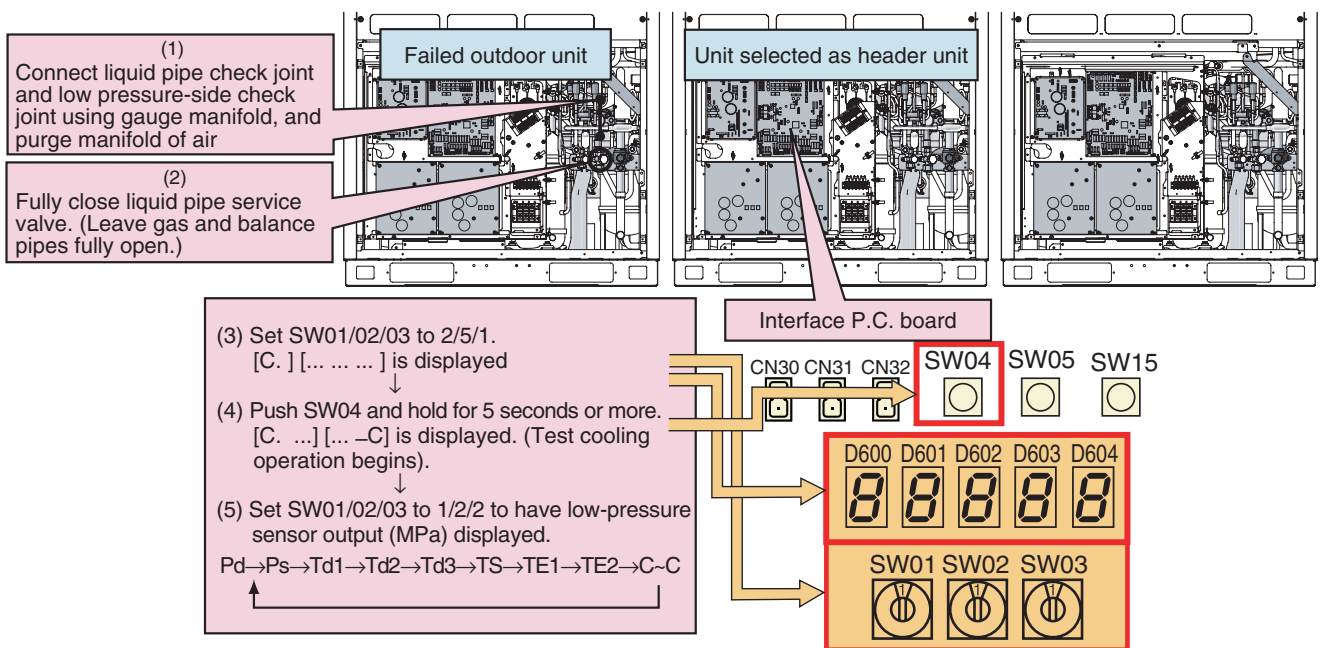
<Work procedure>

[Setup of failed outdoor unit]

- (1) Connect the liquid pipe check joint and the low pressure-side check joint using a gauge manifold, and purge the manifold of air (to recover refrigerant from the liquid tank and heat exchangers).
- (2) Fully close the liquid pipe packed valve and service valve at discharge gas side of the failed outdoor unit. (Leave the service valve of the gas pipe and the packed valve of the balance pipe fully open.)

[Setup of unit selected as header unit (hereafter “header outdoor unit”)]

- (3) Set SW01/02/03 on the interface P.C. board of the header outdoor unit to 2/5/1. After [C.] [... ..] is displayed on the 7-segment display, push SW04 and hold for 5 seconds or more.
- (4) After [C. ...] [... -C] is displayed on the 7-segment display, the system starts operating in the test cooling operation mode.
- (5) Set SW01/02/03 on the interface P.C. board of the header outdoor unit to 1/2/2 to have the low-pressure sensor output (MPa) displayed on the 7-segment display.



- (6) Approx. 10 minutes after the system starts up, fully close the gas pipe service valve of the failed outdoor unit.

[Setup of outdoor unit for pressure adjustment]

- (7) Select the header unit as the unit for pressure adjustment.

[Setup of outdoor units other than header unit and failed unit]

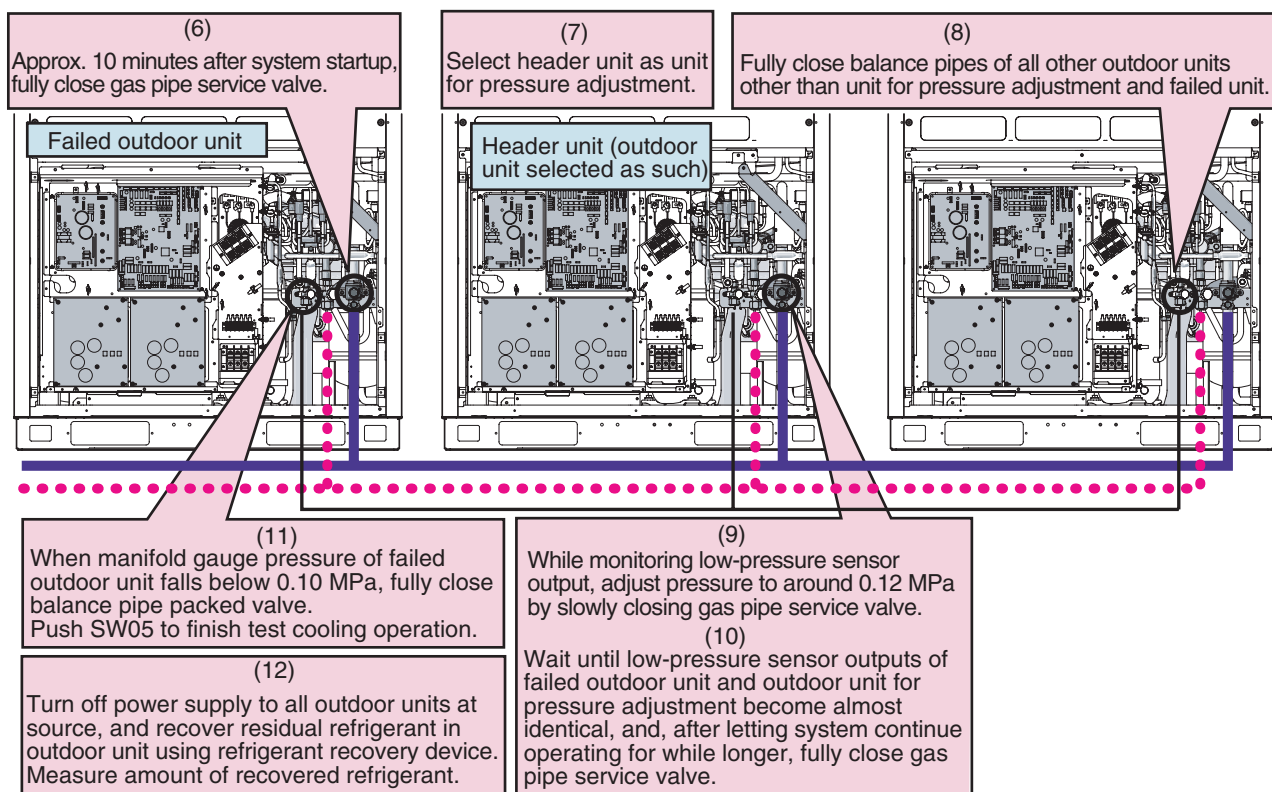
- (8) Leaving the balance pipes of the unit for pressure adjustment and the failed unit fully open, fully close the balance pipe packed valves of all other outdoor units.

[Setup of header unit]

- (9) While monitoring the low-pressure sensor output, adjust the pressure to around 0.12 MPa by slowly closing the gas pipe service valve.
- (10) Compare the manifold gauge pressure of the failed unit with the low-pressure sensor output of the header unit, and wait until the two pressure readings become almost identical.
After letting the system continue operating for a while longer, fully close the gas pipe service valve of the unit for pressure adjustment.

[Setup of failed outdoor unit]

- (11) When the manifold gauge pressure of the failed outdoor unit falls below 0.10 MPa, fully close the balance pipe packed valve, and push **SW05** on the interface P.C. board to finish the test cooling operation.
- (12) Turn off the power supply to all the outdoor units, and recover the residual refrigerant in the outdoor unit using a refrigerant recovery device.
Be sure to measure the amount of recovered refrigerant.
(This is necessary to determine how much additional refrigerant will be needed after the completion of the repair.)



This is the end of the refrigerant recovery operation.
Set **SW01/02/03** of the header unit back to **1/1/1**.

How to Operate System While Failed Outdoor Unit Being Repaired

<Outline>

After refrigerant is recovered from the failed outdoor unit through a pump-down operation, the overall amount of refrigerant held by the system becomes excessive, and this makes it impossible to operate the remaining outdoor units even though they are not faulty. However, operation is still possible if the system-wide amount of refrigerant is adjusted in accordance with the procedure described below.

<Work procedure>

- Follow the steps specified in "Refrigerant Recovery from Failed Outdoor Unit (Pump-Down)".
- Adjust the amount of refrigerant held by the system by removing some of it using a refrigerant recovery device, etc. Determine the amount of refrigerant to be removed according to the capacity of the failed outdoor unit. (See the table below.)

Example

SMMS-i

If a 10HP outdoor unit is under repair in a 30HP system:

Amount of refrigerant required by system as it was initially (30HP in capacity) = **34.5kg**

Amount of refrigerant required by system with available outdoor units only (20HP in capacity) = **26.0kg**

Amount of refrigerant to be removed from system = $34.5 - 26.0 = 8.5\text{kg}$

SHRM-i

If a 10HP outdoor unit is under repair in a 30HP system:

Amount of refrigerant required by system as it was initially (30HP in capacity) = **35.5kg**

Amount of refrigerant required by system with available outdoor units only (20HP in capacity) = **25.5kg**

Amount of refrigerant to be removed from system = $35.5 - 25.5 = 10\text{kg}$

<SMMS-i>

| System capacity (HP) | Outdoor unit combination | | | | Amount of refrigerant (kg) |
|----------------------|--------------------------|----|----|----|----------------------------|
| 8 | 8 | | | | 13.0 |
| 10 | 10 | | | | 14.0 |
| 12 | 12 | | | | 15.0 |
| 14 | 14 | | | | 20.0 |
| 16 | 8 | 8 | | | 23.0 |
| | 16 | | | | 22.0 |
| 18 | 8 | 10 | | | 23.0 |
| 20 | 10 | 10 | | | 26.0 |
| 22 | 10 | 12 | | | 28.0 |
| 24 | 8 | 8 | 8 | | 30.5 |
| | 12 | 12 | | | 30.5 |
| 26 | 8 | 8 | 10 | | 30.5 |
| | 10 | 16 | | | 30.5 |
| 28 | 8 | 10 | 10 | | 32.5 |
| | 12 | 16 | | | 32.5 |
| 30 | 10 | 10 | 10 | | 34.5 |
| | 14 | 16 | | | 34.5 |
| 32 | 8 | 8 | 8 | 8 | 40.0 |
| | 16 | 16 | | | 35.5 |
| 34 | 8 | 8 | 8 | 10 | 40.0 |
| | 10 | 12 | 12 | | 37.5 |
| 36 | 8 | 8 | 10 | 10 | 40.0 |
| | 12 | 12 | 12 | | 38.5 |
| 38 | 8 | 10 | 10 | 10 | 40.0 |
| | 10 | 12 | 16 | | 40.5 |
| 40 | 10 | 14 | 10 | 10 | 41.0 |
| | 12 | 12 | 16 | | 41.5 |
| 42 | 10 | 10 | 10 | 12 | 42.0 |
| | 12 | 14 | 16 | | 42.5 |
| 44 | 10 | 10 | 12 | 12 | 44.0 |
| | 12 | 16 | 16 | | 44.5 |
| 46 | 10 | 12 | 12 | 12 | 46.0 |
| | 14 | 16 | 16 | | 46.5 |
| 48 | 12 | 12 | 12 | 12 | 48.0 |
| | 16 | 16 | 16 | | 48.5 |

<SHRM-i>

| System capacity (HP) | Outdoor unit combination | | | | Amount of refrigerant (kg) |
|----------------------|--------------------------|----|----|--|----------------------------|
| 8 | 8 | | | | 13.0 |
| 10 | 10 | | | | 14.0 |
| 12 | 12 | | | | 19.0 |
| 14 | 14 | | | | 21.0 |
| 16 | 8 | 8 | | | 22.0 |
| 18 | 10 | 8 | | | 23.5 |
| 20 | 10 | 10 | | | 25.5 |
| 22 | 12 | 10 | | | 29.5 |
| 24 | 14 | 10 | | | 30.5 |
| 26 | 14 | 12 | | | 33.0 |
| 28 | 14 | 14 | | | 34.0 |
| 30 | 10 | 10 | 10 | | 35.5 |
| 32 | 12 | 10 | 10 | | 38.0 |
| 34 | 14 | 10 | 10 | | 39.0 |
| 36 | 12 | 12 | 12 | | 41.0 |
| 38 | 14 | 12 | 12 | | 42.5 |
| 40 | 14 | 14 | 12 | | 44.0 |
| 42 | 14 | 14 | 14 | | 45.5 |

Work procedure after Repair

When vacuuming in the repaired outdoor unit, follow the procedure described below.

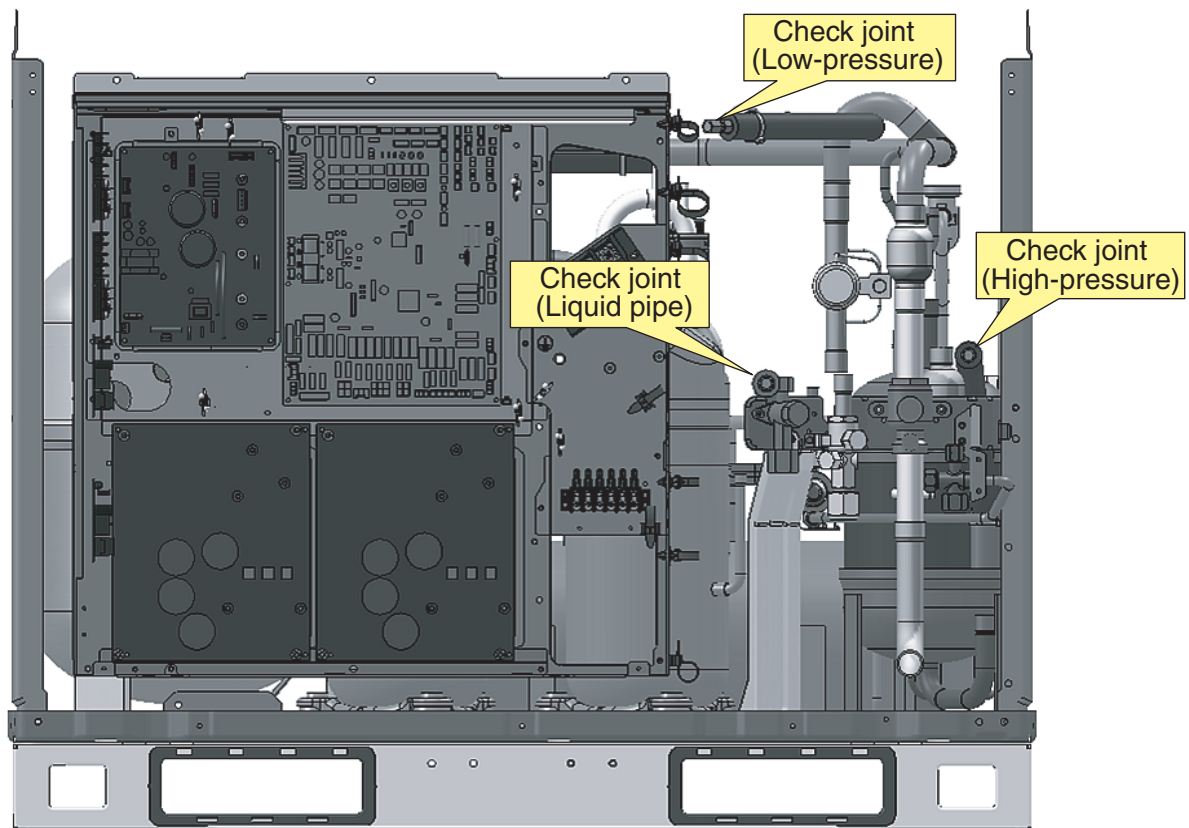
<Work procedure>

(1) Fully open PMV1 and 2 and PMV4 in accordance with the table below.

Note: PMV full-opening operation via short-circuiting of the CN30 pins is automatically undone after 2 minutes, causing the valves to fully close. To maintain fully open state, turn off the power switch of the outdoor unit within 2 minutes of the short-circuiting of the CN30 pins.

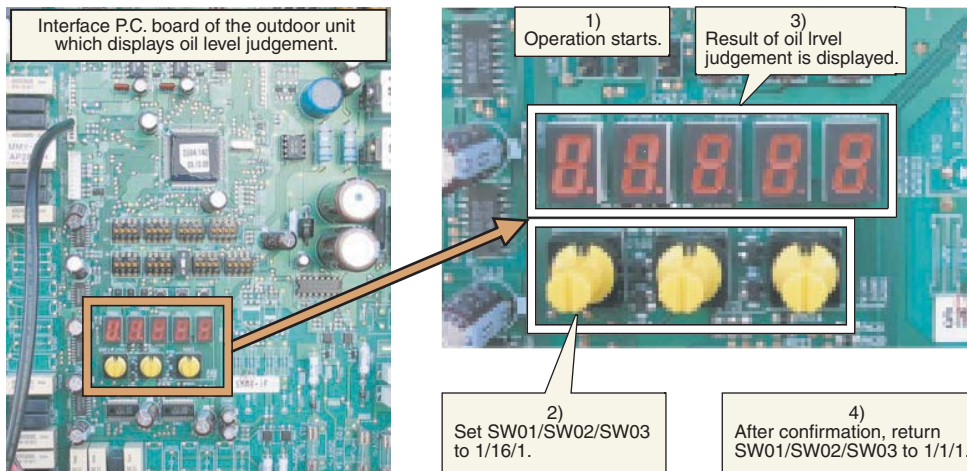
| SW12 | | | | CN30 | PMV operation |
|-------|-------|-------|-------|---------------|--------------------------------------|
| Bit 1 | Bit 2 | Bit 3 | Bit 4 | | |
| OFF | OFF | OFF | OFF | Short-circuit | PMV1 and 2 fully open for 2 minutes. |
| OFF | ON | OFF | OFF | Short-circuit | PMV4 fully opens for 2 minutes. |

(2) Be sure to perform vacuuming in from the three check joints shown in the diagram below (liquid pipe, discharge pipe and suction pipe).



The judgment result of the current oil level of the compressor can be confirmed by the switch setup on the interface P.C. board of the outdoor unit. Confirm the result in the following procedure.

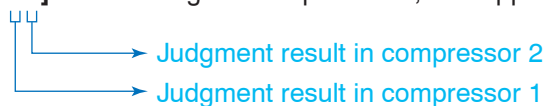
■ Operation procedure



- 1) Start the operation.
- 2) Set up the switches on the interface P.C. board of the outdoor unit of which judgment result of oil level is to be confirmed as shown below.
SW01/SW02/SW03 = 1/16/1
- 3) The judgment result of the oil level is displayed on 7-segment display.
7-segment display [oL] [A00]
 The right 3 digits indicate the judgment result.
 The judgment results of the oil level in compressor 1 and compressor 2 are displayed.
 (Example: A ○ □ = A : Oil level result of compressor 1, □ : Oil level result of compressor 2)

Display example

- 7-segment display [oL] [A00] : Oil level is appropriate in compressor 1 and 2.
 [oL] [A01] : Oil level is appropriate in compressor 1, and shortage in compressor 2
 [oL] [A20] : Oil shortage in compressor 1, and appropriate in compressor 2



For the contents of judgment result, refer to the following table.)

Judgment result of oil level

| 7-segment display | Judgment result | Contents |
|-------------------|-------------------|---|
| 0 | Appropriate | Oil level inside of the compressor is appropriate. |
| 1 2 | Shortage | Shortage of oil level in the compressor (Both A1 and A2 indicate shortage.) If this judgment continues, the system stops for protection. |
| A | TK1 circuit error | TK1 circuit error is considered. If this judgment continues, the system stops for protection. |
| B | TK2 circuit error | TK2 circuit error is considered. If this judgment continues, the system stops for protection. |
| C | TK3 circuit error | TK3 circuit error is considered. If this judgment continues, the system stops for protection. |
| D | TK4 circuit error | TK4 circuit error is considered. If this judgment continues, the system stops for protection. |

- 4) After confirmation, return **SW01/SW02/SW03** to (1/1/1).

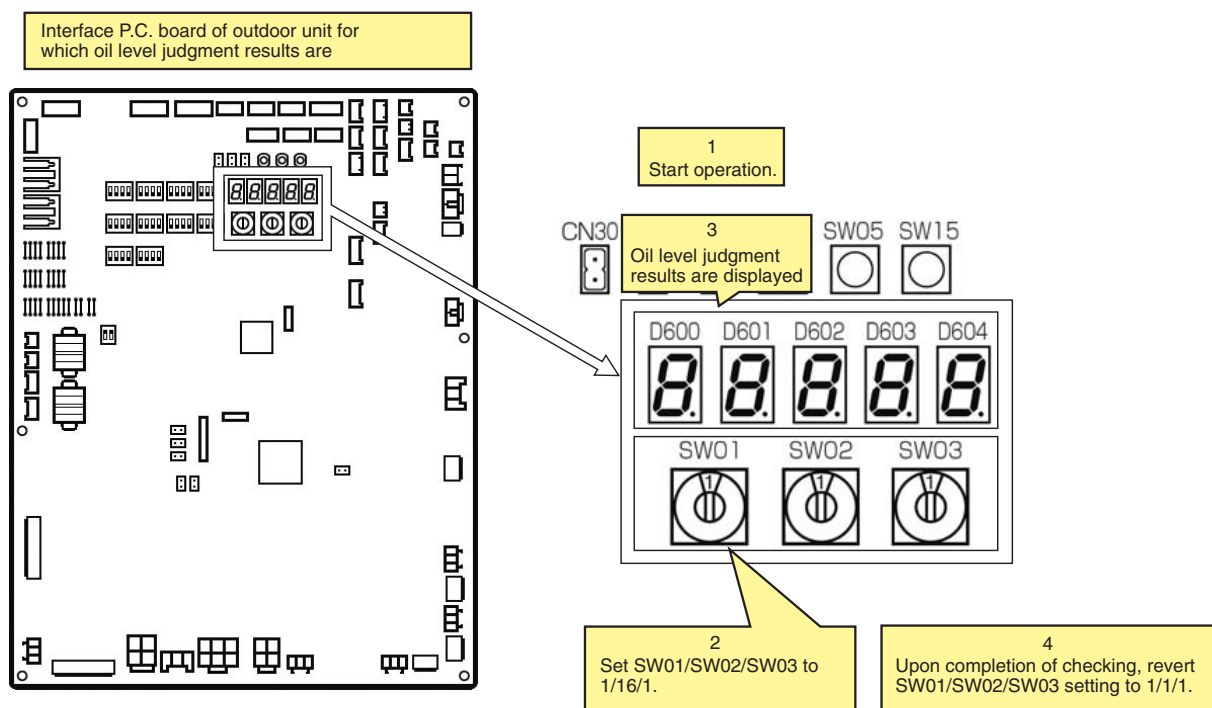
147 Oil Level Judgment Display <SHRM-i>

The current compressor oil level judgment results can be accessed by setting the switches provided on the interface P.C. board of an outdoor unit.

Perform the checks in accordance with the procedure described below.

Operation Procedure

- 1) Start the operation.
- 2) Set the switches provided on the interface P.C. board of the outdoor unit for which oil level judgment results are required as follows.
SW01/SW02/SW03 = 1/16/1
- 3) The oil level judgment result will be displayed on the 7-segment display.
7-segment display: [oL] [#."\$.]
 The letters #, " and \$ are digits that represent judgment results for compressor Nos. 1, 2 and 3, respectively. (See the table below for the interpretation of the judgment results.)
- 4) When checking is completed, revert the **SW01/SW02/SW03** setting to [1/1/1].



Display example

- 7-segment display [oL] [0|0|0] Oil level is normal for compressors 1, 2 and 3.
 [oL] [2|2|2] Oil level is low for compressors 1, 2 and 3.
 [oL] [0|2|0] Oil level is low for compressor 2 and normal for compressors 1 and 3.
- Judgment result for compressor 3
 Judgment result for compressor 2
 Judgment result for compressor 1

Oil Level Judgment Results

| Displayed digit | Judgment result | Description |
|-----------------|-----------------|--|
| 0 | Normal | The amount of oil in the compressor is sufficient. |
| 1 | Low level | The amount of oil in the compressor is insufficient. (Both "1" and "2" stand for insufficiency.) If this result persists, the system will turn itself off in a protective shutdown. |
| 2 | | |

SHRM-i Outdoor Interface P.C. Board Function Setting Exchange Table

Switch/Function Setting Exchange

| Part type | | Exchange contents | | | Initial setting at shipment | | |
|-----------|-----------------|---|--|---|--|-----|---|
| SW06 | DIP SW 4 bit | bit 1 | Compressor 1 backup | OFF: Normal, ON: Backup when compressor 1 was in trouble | OFF | | |
| | | bit 2 | Compressor 2 backup | OFF: Normal, ON: Backup when compressor 2 was in trouble | OFF | | |
| | | bit 3 | Compressor 3 backup | OFF: Normal, ON: Backup when compressor 3 was in trouble | OFF | | |
| | | All bit1, 2, and 3 are ON: Setup of outdoor unit backup | | | OFF | | |
| SW07 | DIP SW 4 bit | bit 1 | Demand control 1 (Standard specifications) Exchange of upper limit regulation | OFF: 0 to 100% ON : Middle to 100% | OFF | | |
| | | bit 2 | Demand control 2 (Expansion function) Exchange of 2 steps to 4 steps of upper limit | OFF: 2 steps (Standard) ON : 4 steps | OFF | | |
| SW09 | DIP SW 4 bit | In case of center outdoor unit | | | | | |
| | | bit 2 | Indoor connection capacity over Judgment of error | OFF: Error judgment ON : None (when backup setting for outdoor unit) | OFF | | |
| | | bit 4 | Judgment of error for No. of connected indoor units | OFF: No error judgment ON : Error judgment | OFF | | |
| | | In case of terminal outdoor unit | | | | | |
| SW10 | DIP SW 4 bit | bit 2 | Outdoor fan high static pressure operation | OFF: Normal ON : High static pressure operation | OFF | | |
| | | bit 3 | For low noise operation | OFF: Normal ON : INV frequency upper limit restriction | OFF | | |
| | | bit 4 | | OFF: Normal ON : Fan rpm upper limit restriction | OFF | | |
| SW11 | DIP SW 4 bit | bit 4 | Operation switching when indoor water overflow error detected | OFF: Entire system stops ON : System operation continues (Room which trouble occurred only stops.) | OFF | | |
| SW12 | DIP SW 4 bit | bit 1 | Selection of PMV open/close or manual operation | (According to the following setting contents) | | OFF | |
| | | bit 2 | | | | OFF | |
| | | | bit 1 | bit 2 | OFF | OFF | PMV1, 2 opens/closes by operation of CN30/CN31 (*3) |
| | | | OFF | ON | PMV4 opens/closes by operation of CN30/CN31 (*3) | | |
| SW13 | DIP SW 4 bit | bit 4 | Line address setup | (Used by combining with SW14) | OFF | | |
| SW14 | DIP SW 4 bit | bit 1 | Line address setup | | OFF | | |
| | | bit 2 | | OFF | | | |
| | | bit 3 | | OFF | | | |
| | | bit 4 | | OFF | | | |
| SW16 | DIP SW 4 bit | bit 1 | Option function | (According to the following setting contents) | | OFF | |
| | | bit 2 | | Output exchange of external output P.C. boa | | OFF | |
| | | | bit 1 | bit 2 | OFF | OFF | Compressor operation output |
| | | | ON | OFF | Display of system operation ratio | | |
| SW17 | DIP SW 4 bit | bit 3 | Clean converter connected | OFF: No connection, ON: Connection | OFF | | |
| SW30 | DIP SW 2 bit | bit 1 | Communication termination resistance between outdoor units | OFF: No termination resistance ON : With termination resistance | ON | | |
| | | bit 2 | Communication termination resistance between indoor and outdoor units | OFF: No termination resistance ON : With termination resistance | ON | | |
| CN30 | Check connector | Manual full opening operation for PMV opening operation | | When released: Normal, When short-circuited: Open fully (*1) | Released | | |
| CN31 | Check connector | Manual full closing operation for PMV opening operation | | When released: Normal, When short-circuited: Closed fully (*2) | Released | | |

*1 Manual PMV full opening operation by short-circuit of **CN30** returns to normal status (Original opening) for 2 minutes.

*2 Manual PMV full closing operation by short-circuit of **CN31** returns to normal status (Original opening) for 2 minutes.

*3 PMV full open/full close operation by short-circuited **CN30/CN31** is for PMV which was selected by setting of **SW12**.

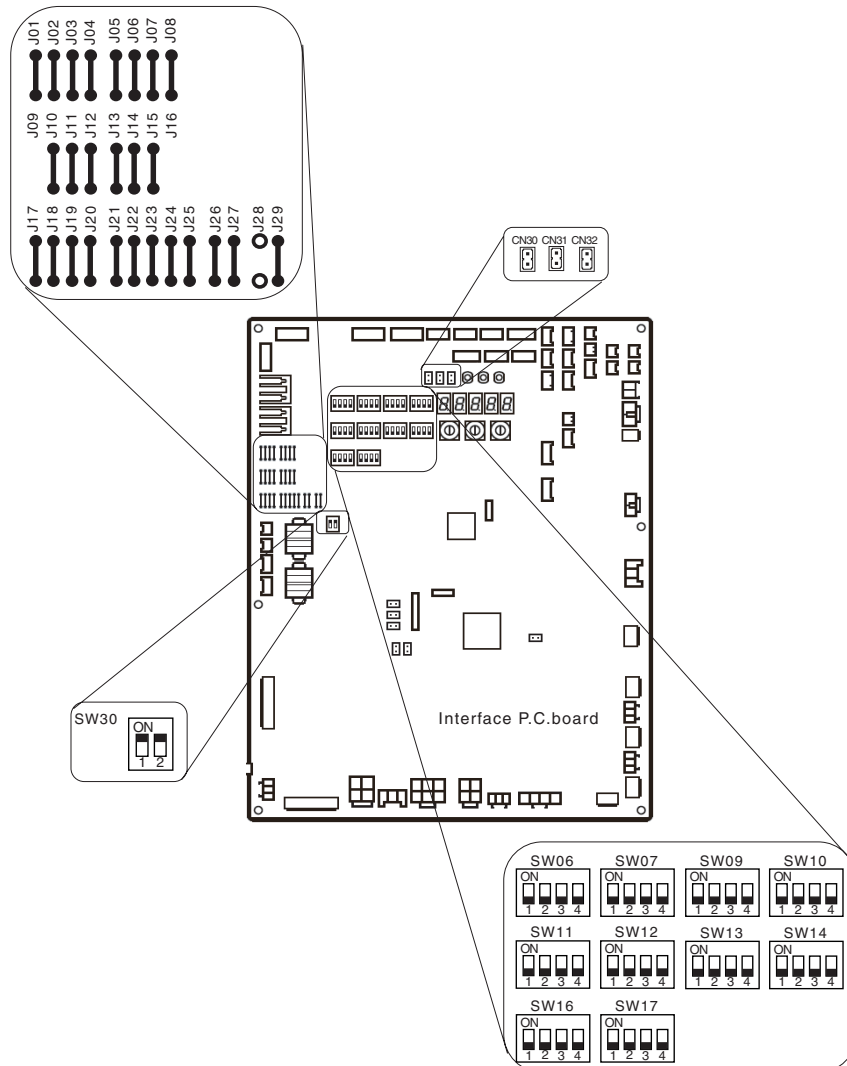
Switching of Jumper Wire/Function Setup

Function switching setup

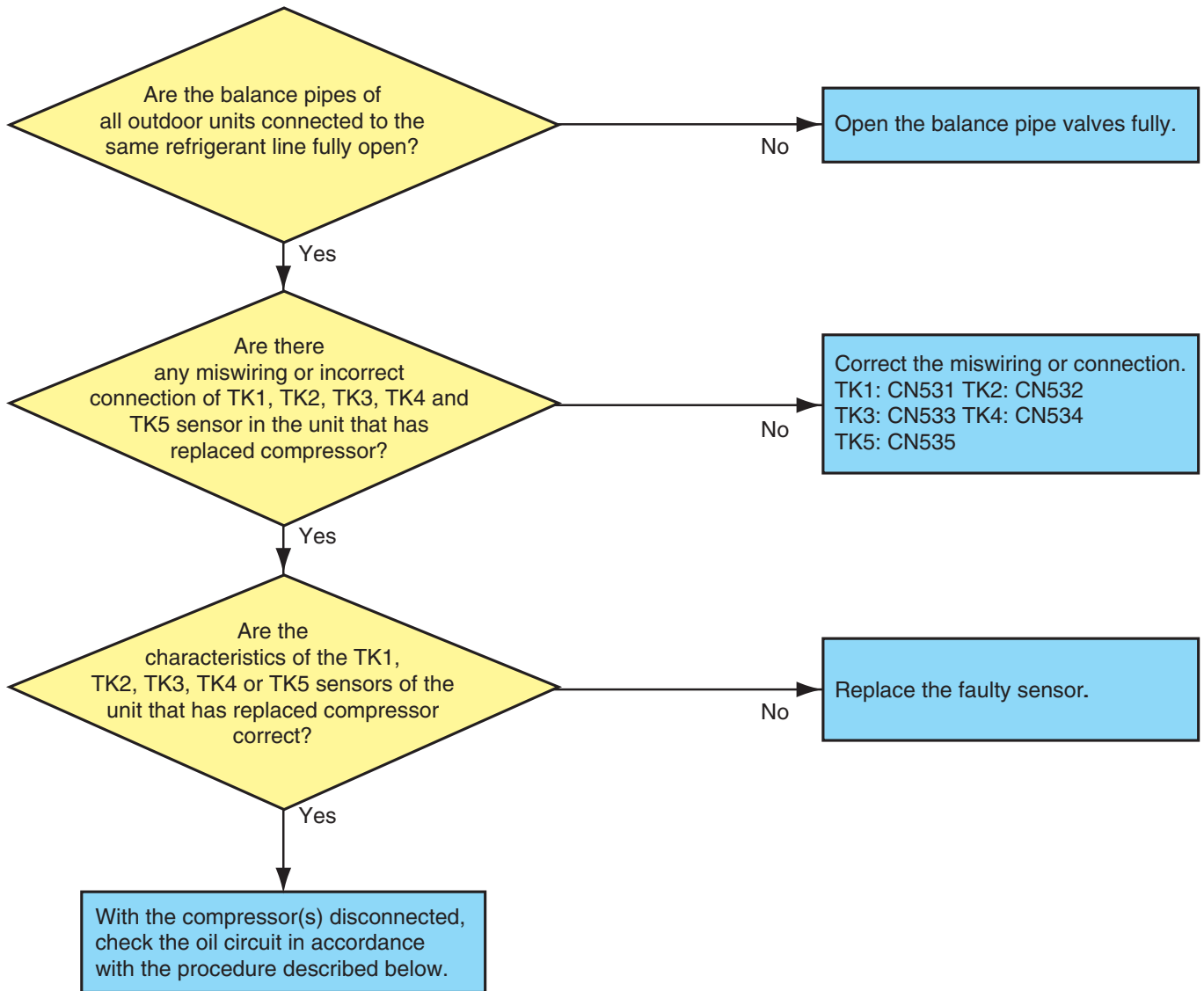
○ : With jumper, × : Without jumper (Cut)

| jumper | Part type | Exchange contents | Initial setting at shipment |
|--------|---|---|-----------------------------|
| J01 | Optional function Operation mode selection operation switching | ○ Indoor unit at not selected side is kept with waiting status. | ○ |
| | | × The mode is changed a mode which selected the operation mode of the indoor unit at not selected side. | |
| J04 | Upper limit setup of demand capacity command in corresponding indoor during saving operation in indoor | ○ Approx. 75% (Normal) | ○ |
| | | × Approx. 60% | |
| J09 | Setup for service P.C. board (Model setup) | ○ ○ ○ ○ At shipment from factory *4 | ○ |
| J10 | | × × ○ ○ MMY-MAP2244F | ○ |
| | | ○ × ○ ○ MMY-MAP2804F | |
| J11 | | × × × × MMY-MAP3354F | ○ |
| | | ○ × × × MMY-MAP4004F | |
| J12 | | ○ | |
| J16 | Demand control 1 (Standard specification) Corresponds to 2-core wire | ○ Normal (3-core wire <Successive MAKE signal> or 4-core wire <Successive MAKE or Pulse signal>) | ○ |
| | | × 2-core wire <Successive MAKE signal> | |

*4 When you replace the board with a service board, be sure to cut the jumper wire matching with the outdoor unit model to be installed. (The jumper wires J09 to J12 which were mounted at shipment from the factory are provided to all the boards regardless of model type.)



Check Procedure to Search Cause of Compressor Oil Shortage

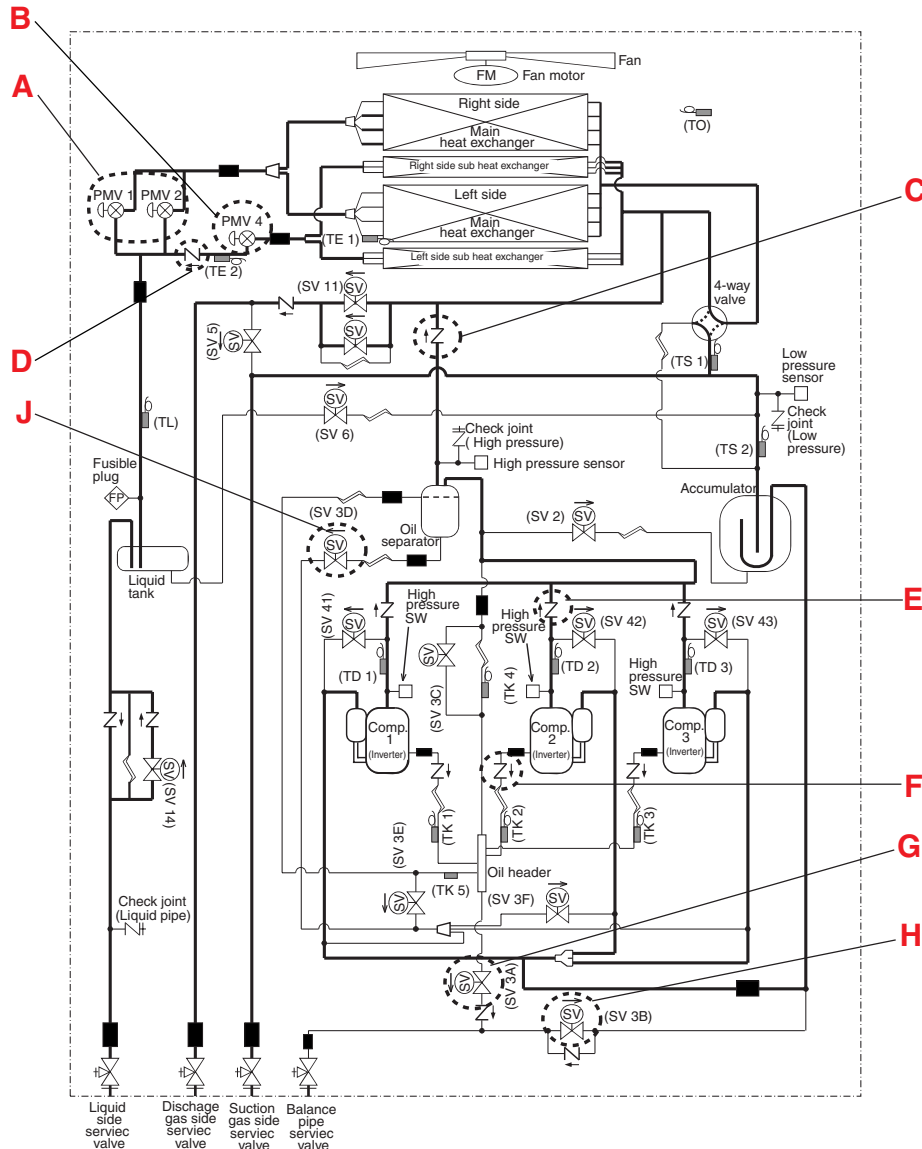


(To next page)

<MMY-MAP0804*, MAP1004*, MAP1204* and MAP1404*>

Check items and procedures to follow when checking oil circuit with compressor(s) disconnected

| Check item | Location | Procedure |
|--|--------------------------|--|
| Leakage of outdoor PMV Leakage of check valve in discharge pipe convergent section | A,B C,D | 1) Pressure nitrogen from check joint of the liquid pipe under condition that PMV1, 2 and 4 are fully closed, confirm the pressure using high-pressure check joint. If pressure of the high-pressure check joint rises, leakage from any of PMV1, 2, 4 (A, B), check valve (D) and discharge check valve (C) is considered. Therefore replace all PMV1, 2, 4 (A, B), check valve (D), discharge check valve (C). 2) If pressure did not rise, open PMV1, 2 fully and then confirm pressure of the high-pressure check joint. When pressure was up, open fully PMV4 only and confirm pressure of the high-pressure check joint again. 3) When pressure was up, there is leakage from check valve (D) and discharge check valve (C). Therefore replace them. If pressure did not rise, there is leakage from discharge check valve. Therefore replace them. |
| Leakage of check valve in discharge pipe | E | 4) With pressure applied to the check joint of with nitrogen, if gas escapes from the discharge pipe section of the disconnected compressor, there is a leak from the check valve of discharge pipe (E). Replace the part. |
| Leakage of check valve in oil equalization circuit | F | 5) With pressure applied to the check joint of with nitrogen, if gas escapes from the oil equalization pipe section of the disconnected compressor, there is a leak from the oil equalization pipe check valve (F). Replace the part. |
| Leakage of SV3A valve | G | 6) With pressure applied to the check joint of with nitrogen, manually open the SV3B valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3A valve. Replace the part. |
| Leakage of SV3B valve | H | 7) Then manually open the SV3A valve. If gas escapes from the suction pipe section of the disconnected compressor, there is a leak from the SV3B valve. Replace the part. |
| Clogging of SV3E valve Clogging of oil-return distributor | I | 8) With pressure applied to the check joint of with nitrogen, manually open the SV3E valve. If gas does not escape from the suction pipe section of the disconnected compressor, the SV3E valve or oil-return distributor is clogged. Replace the part. |
| Clogging of SV3D valve Clogging of oil-return capillary Clogging of oil-return distributor | J | 9) With pressure applied to the check joint of with nitrogen, manually open the SV3D valve. If gas does not escape from the suction pipe section of the disconnected compressor, the SV3D valve, oil-return capillary or oil-return distributor is clogged. Replace the part. |



Leakage/Clogging of Refrigerating Cycle Circuit

List of Check Codes Generated upon Occurrence of Leakage/Clogging in Outdoor Cycle or Oil Circuit Part

(MMY-MAP0804*, 1004*,)

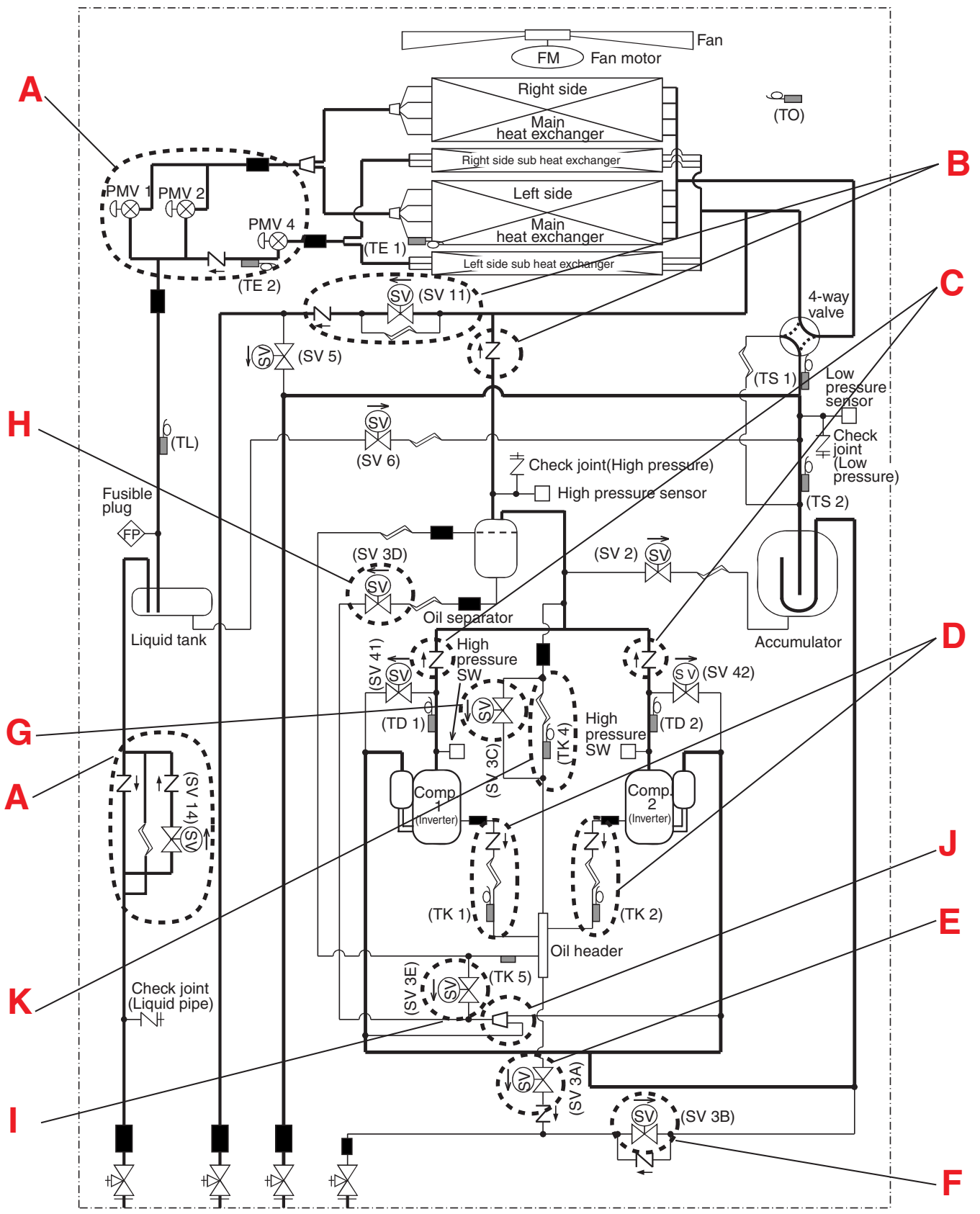
Clogging

| Part | Site of fault (see next page) | Check target unit | Detected fault and check code | | Symptom |
|--|----------------------------------|----------------------|---|--------------------------|---|
| Outdoor PMV1, 2, 4 Outdoor PMV4 circuit check valve SV14 valve SV14 valve circuit check valve | A | Corresponding unit | Activation of high-pressure protection Activation of low-pressure protection Discharge temp. error (TD1) Discharge temp. error (TD2) | P20 H06 P03 P17 | Rise of abnormal pressure Fall of pressure Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2) |
| Check valve in discharge pipe convergent section SV11 valve SV11 valve circuit check valve | B | Corresponding unit | High-pressure protection operation High-pressure SW system error | P20 P04-XX | Abnormal rise of pressure |
| Check valve in discharge pipe | C | Corresponding unit | High-pressure SW system error | P04-XX | Abnormal rise of pressure |
| Check valve in oil-equalization circuit Capillary Strainer | D | Corresponding unit | Oil level detection circuit error Oil level low detection and protection | H16-XX H07-XX | Oil circuit error or oil shortage judgment |
| SV3A valve | E | Other connected unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3B valve | F | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C valve | G | Other connected unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3D valve SV3D valve circuit capillary Strainer | H | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3E valve | I | Corresponding unit | Oil level detection circuit error Oil level low detection and protection | H16-05 H07-XX | Oil circuit error Oil level low Oil level low |
| Oil return distributor | J | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C bypass capillary | K | Corresponding unit | Oil level detection circuit error | H16-04 | Oil circuit error |

Leakage

| Part | Site of fault (see next page) | Check target unit | Detected fault and check code | | Symptom |
|---|----------------------------------|----------------------|---|----------------------------|--|
| Outdoor PMV1, 2 | A | Corresponding unit | Outdoor liquid backflow error Oil level low detection and protection | P13 H07-XX | Refrigerant entrapment |
| | | Other connected unit | Discharge temp. error (TD1) Discharge temp. error (TD2) | P03 P17 | Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2) |
| Check valve in discharge pipe convergent section | B | Corresponding unit | Oil level low detection and protection Compressor breakdown Compressor error (lockup) | H07-XX H01-XX H02-XX | Refrigerant entrapment |
| Check valve in discharge pipe | C | Corresponding unit | Oil level low detection and protection Compressor breakdown Compressor error (lockup) | H07-XX H01-XX H02-XX | Refrigerant entrapment |
| Check valve in oil-equalization circuit | D | Corresponding unit | Oil level low detection and protection | H07-XX | Excessive amount of oil (Leaking side) Insufficient amount of oil (Normal side) |
| SV3A valve | E | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C valve | G | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |

Note) "XX" represents sub-code



- Liquid side service valve
- Discharge gas side service valve
- Suction gas side service valve
- Balance pipe service valve

| Symbol | | | | | | | |
|--------|----------------|----------------|-------------|-------------|----------|--------------|-------------|
| Symbol | | | | | | | |
| | Solenoid valve | Capillary tube | Check valve | Check joint | Strainer | Temp. sensor | Distributor |

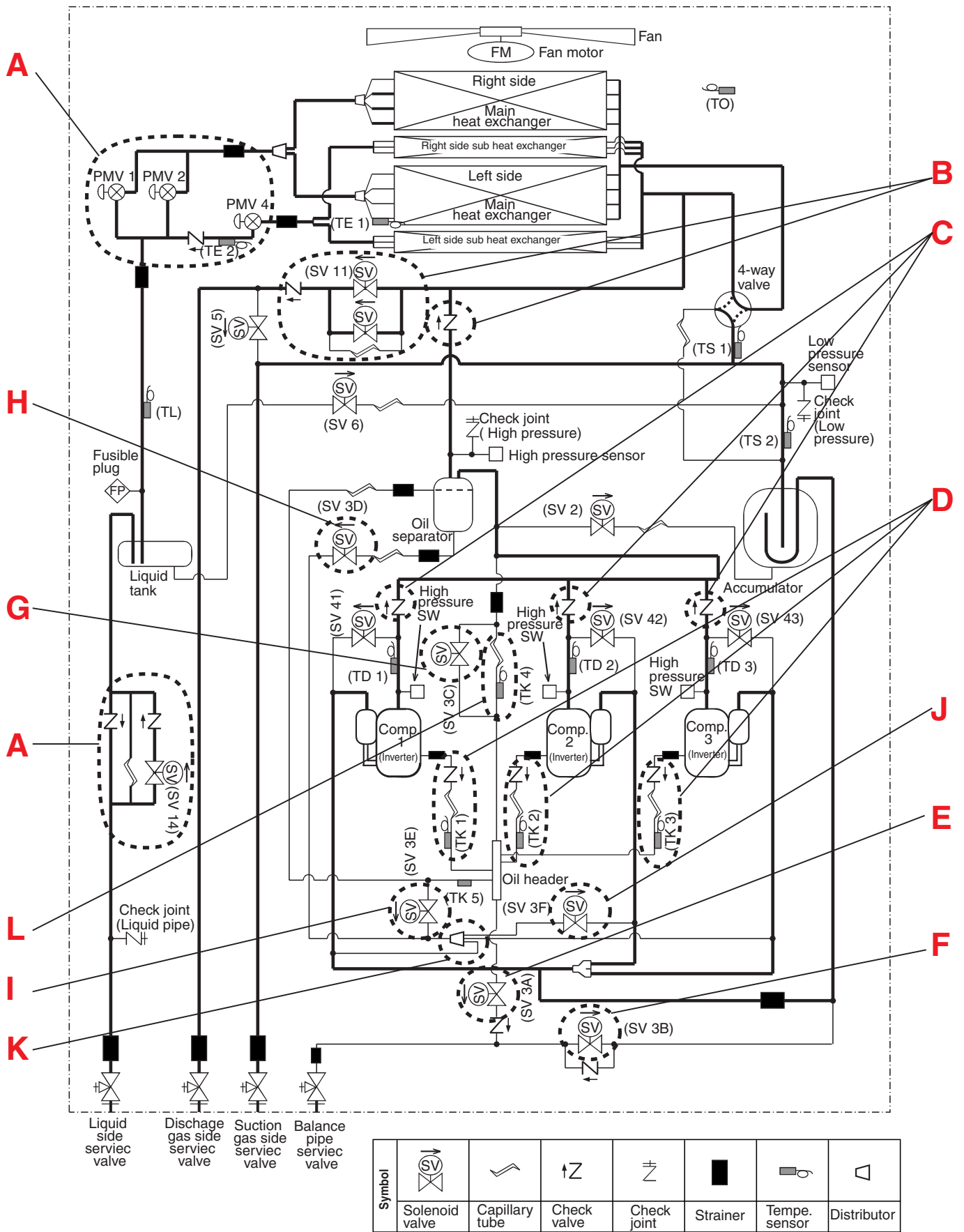
List of Check Codes Generated upon Occurrence of Leakage/Clogging in Outdoor Cycle or Oil Circuit Part (MMY-MAP1204*, 1404*)

Clogging

| Part | Site of fault (see next page) | Check target unit | Detected fault and check code | | Symptom |
|--|----------------------------------|----------------------|--|---------------------------------|--|
| Outdoor PMV1, 2, 4 Outdoor PMV4 circuit check valve SV14 valve SV14 valve circuit check valve | A | Corresponding unit | Activation of high-pressure protection Activation of low-pressure protection Discharge temp. error (TD1) Discharge temp. error (TD2) Discharge temp. error (TD3) | P20 H06 P03 P17 P18 | Rise of abnormal pressure Fall of pressure Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2) Rise of discharge temp. (compressor 3) |
| Check valve in discharge pipe convergent section SV11 valve SV11 valve circuit check valve | B | Corresponding unit | High-pressure protection operation High-pressure SW system error | P20 P04-XX | Abnormal rise of pressure |
| Check valve in discharge pipe | C | Corresponding unit | High-pressure SW system error | P04-XX | Abnormal rise of pressure |
| Check valve in oil-equalization circuit Capillary Strainer | D | Corresponding unit | Oil level detection circuit error Oil level low detection and protection | H16-XX H07-XX | Oil circuit error or oil shortage judgment |
| SV3A valve | E | Other connected unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3B valve | F | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C valve | G | Other connected unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3D valve SV3D valve circuit capillary Strainer | H | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3E valve | I | Corresponding unit | Oil level detection circuit error Oil level low detection and protection | H16-05 H07-XX | Oil circuit error Oil level low Oil level low |
| SV3F valve | J | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| Oil return distributor | K | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C bypass capillary | L | Corresponding unit | Oil level detection circuit error | H16-04 | Oil circuit error |

Leakage

| Part | Site of fault (see next page) | Check target unit | Detected fault and check code | | Symptom |
|---|----------------------------------|----------------------|---|----------------------------|---|
| Outdoor PMV1, 2 | A | Corresponding unit | Outdoor liquid backflow error Oil level low detection and protection | P13 H07-XX | Refrigerant entrapment |
| | | Other connected unit | Discharge temp. error (TD1) Discharge temp. error (TD2) Discharge temp. error (TD3) | P03 P17 P18 | Rise of discharge temp. (compressor 1) Rise of discharge temp. (compressor 2) Rise of discharge temp. (compressor 3) |
| Check valve in discharge pipe convergent section | B | Corresponding unit | Oil level low detection and protection Compressor breakdown Compressor error (lockup) | H07-XX H01-XX H02-XX | Refrigerant entrapment |
| Check valve in discharge pipe | C | Corresponding unit | Oil level low detection and protection Compressor breakdown Compressor error (lockup) | H07-XX H01-XX H02-XX | Refrigerant entrapment |
| Check valve in oil-equalization circuit | D | Corresponding unit | Oil level low detection and protection | H07-XX | Excessive amount of oil (Leaking side) Insufficient amount of oil (Normal side) |
| SV3A valve | E | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |
| SV3C valve | G | Corresponding unit | Oil level low detection and protection | H07-XX | Oil level low |



Refrigerant recovery in the troubled outdoor unit

A pump-down function if prepared to this system. For multiple outdoor unit system, execute pump-down by using the normal outdoor units and refrigerant can be recovered from the outdoor unit to be repaired.

1 Before refrigerant recovery operation

Pay attention to the following items during pump-down operation.

- Note 1)** The refrigerant recovery rate changes with the outside temperature, etc. in the pump-down operation. When the pump-down operation has finished, be sure to recover the remaining gas using a recovery device and measure the recovered refrigerant amount. (Executing pump-down operation when pump-down operation is operated with heating accumulator of the outdoor unit to be repaired improves refrigerant recovery rate.)
- Note 2)** After this work, the system cannot operate until the defective outdoor unit has been repaired. (As the operation becomes refrigerant overcharge operation, a continuous operation is unavailable.)
- Note 3)** While both outdoor pulse motor valves are closed (cannot open the valves), the refrigerant in the heat exchanger cannot be recovered. If executing welding after pump-down operation, recover the refrigerant in the heat exchanger before work.

2 Refrigerant recovery procedure (In case of no backup operation for outdoor unit)

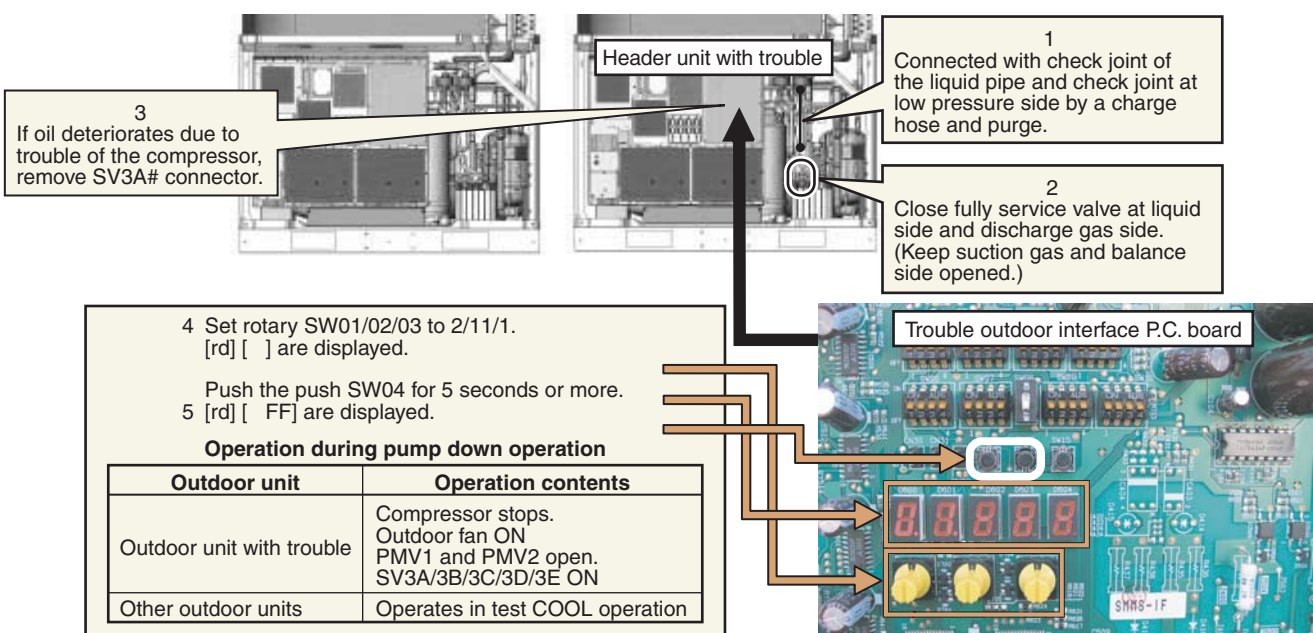
<Work procedure>

Turn on the power supply of the system, and stop status of system operation.

If a trouble is an insulation error of the compressor, remove wiring to the compressor before turning on the power supply.

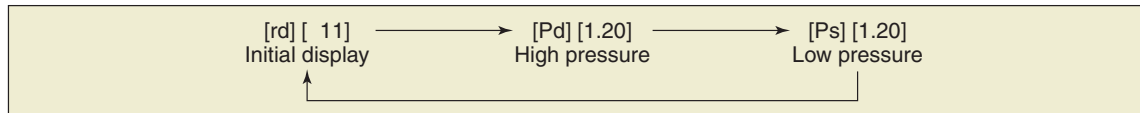
[Setup for the outdoor unit with trouble]

1. Using a charge hose, connect the check joint of the liquid pipe and the check joint at low-pressure side, and then purge the air in the hose. (To recover refrigerant in the heat exchanger and the liquid tank)
 2. Close fully the service valve of the liquid pipe and discharge gas pipe of the outdoor unit with trouble. (Keep service valve of the suction gas pipe and the balance pipe opened.)
 3. If it is considered that the oil has deteriorated due to trouble of the compressor, take off SV3A valve connector of the outdoor unit with trouble so that the deteriorated oil does not flow in the other outdoor units.
 4. Set the rotary SW01/02/03 to 2/11/1 on the interface P.C. board of the troubled outdoor unit and then push SW04 for 5 seconds or more after [rd] [] have been displayed on 7-segment display section.
 5. [rd] [FF] have been displayed on 7-segment display, and then a pump-down operation starts.
- * When interrupting the operation, turn off the power supplies of all the outdoor units or push SW05 on the interface P.C. board.



6. Close fully the service valve of the suction gas pipe of the troubled outdoor unit approx. 10 minutes after the system has started.
7. Push the push **SW04** of the troubled outdoor unit in order to display the pressure data (MPa). (Every pushing **SW04**, the displayed data changes successively.)

Display Example



[Selection of outdoor unit for pressure adjustment]

8. For the outdoor units which are operating with pump-down mode, the outdoor unit having the least unit number is selected as the outdoor unit for adjustment of pressure.

Unit No.
While SW01/02/03 are set to 1/1/1, the number displayed on 7-segment display indicates the unit No.
([U#] [- - -]: # indicates the unit No.)

[Selection for outdoor units other than unit for adjustment of pressure and troubled unit]

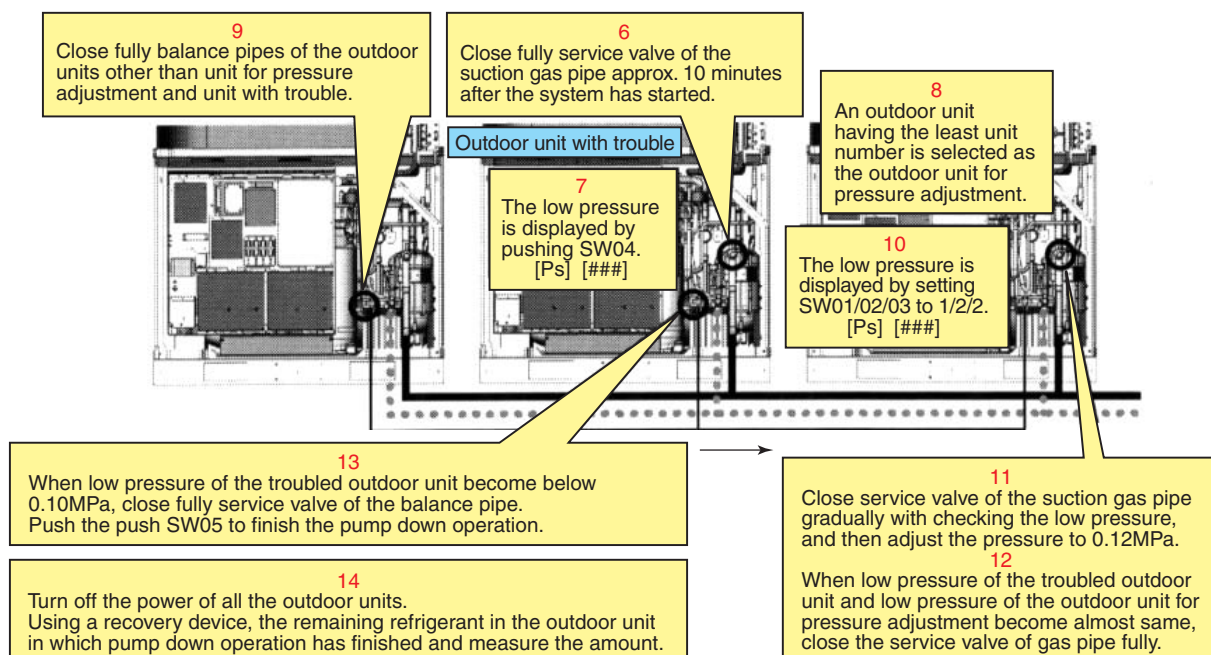
9. Keep only the service valve of balance pipe of the unit for pressure adjustment and the troubled unit fully opened, and close fully the service valves of other outdoor unit balance pipes.

[Setup for outdoor unit for adjustment of pressure]

10. Set up the rotary **SW01/02/03** to **1/2/2** on the interface P.C. board of the outdoor unit for adjustment of pressure.
11. As the low-pressure data is displayed on 7-segment display section, close the service valves of the suction gas pipe slowly by confirming by confirming the pressure data, and then adjust so that the pressure becomes around 0.12MPa.
12. When the low-pressure of the troubled outdoor unit has become almost same as that of the unit for pressure adjustment, close fully the service valve of the gas pipe of the unit for pressure adjustment after operation for a while.

[Setup for the troubled outdoor unit]

13. When the low-pressure of the troubled outdoor unit becomes below 0.10MPa, close fully service valve of the balance pipe and then push **SW05** on the interface P.C. board to finish the pump-down operation.
14. Turn off the power supplies of all the outdoor units, and use a refrigerant recovery device to recover the remaining refrigerant in the outdoor unit which the pump-down operation has completed. Be sure to measure the recovered refrigerant amount. (It is because addition of refrigerant corresponding to recovered amount is necessary after repair.)



All of the refrigerant recovery work has finished.

Backup operation of the outdoor unit is being executed

If the power of the troubled unit cannot be turned on, the solenoid valve PMV of the unit cannot be turned on. Therefore the refrigerant recovery amount decreases compared with the usual pump-down operation. Using a refrigerant recovery device, recover the remaining gas in the unit and measure the recovered amount.

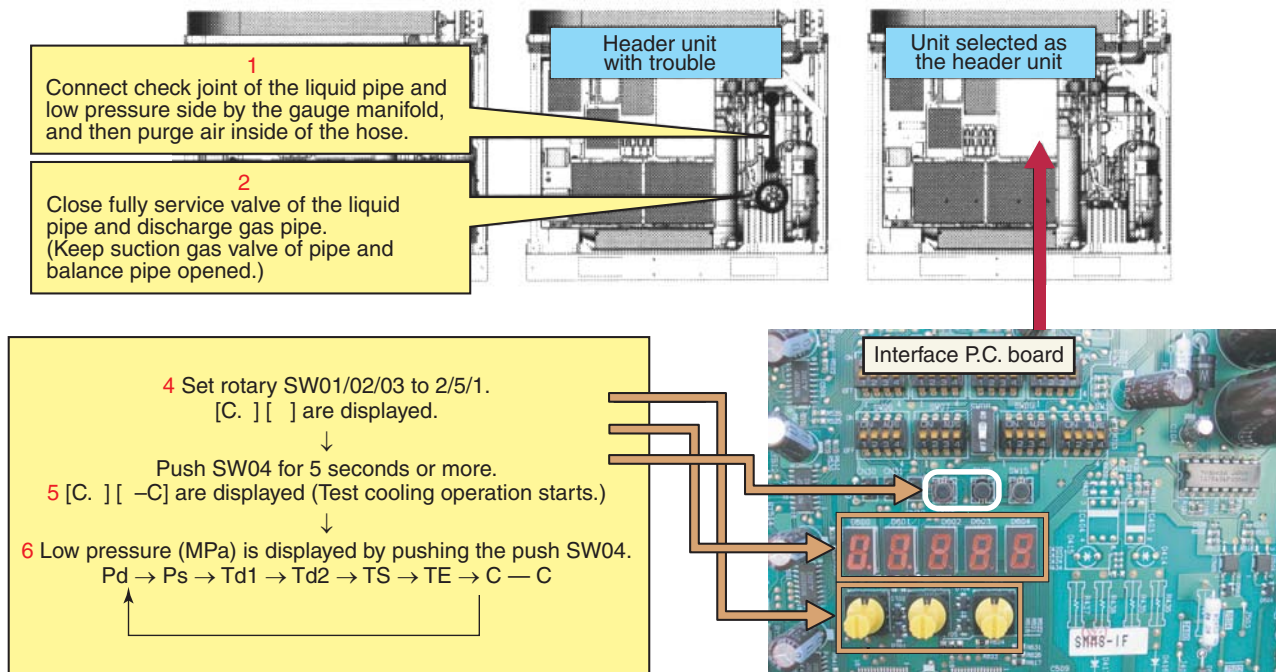
<Work procedure>

[Setup for the troubled outdoor unit]

1. Using a gauge manifold, connect the check joint of the liquid pipe and the low-pressure side, and then purge air in the hose. (To recover refrigerant in the heat exchanger and the liquid tank)
2. Close fully the service valve of the liquid pipe and discharge gas pipe of the outdoor unit with trouble. (Keep service valve of the suction gas pipe and the balance pipe opened.)

[Setup for the unit selected as header unit]

3. Set up the rotary SW01/02/03 to 2/5/1 on the interface P.C. board of the header outdoor unit, and push the push SW04 for 5 seconds or more after [C.] [] have been displayed on 7-segment display section.
4. The system operates in the test cooling operation after [C.] [- C] have been displayed on 7-segment display section.
Set up the rotary SW01/02/03 to 1/2/2 on the interface P.C. board of the header outdoor unit to display the lowpressure data (MPa) on 7-segment display section.
5. Push the SW04 for 2 seconds, then low pressure (MPa) is displayed on 7-segment.



6. Close fully the service valve of the suction gas pipe on the troubled outdoor unit approx. 10 minutes after the system has started.

[Setup for outdoor unit for adjustment of pressure]

7. Select the header unit as the unit for pressure adjustment.

[Setup for outdoor units other than header unit and troubled unit]

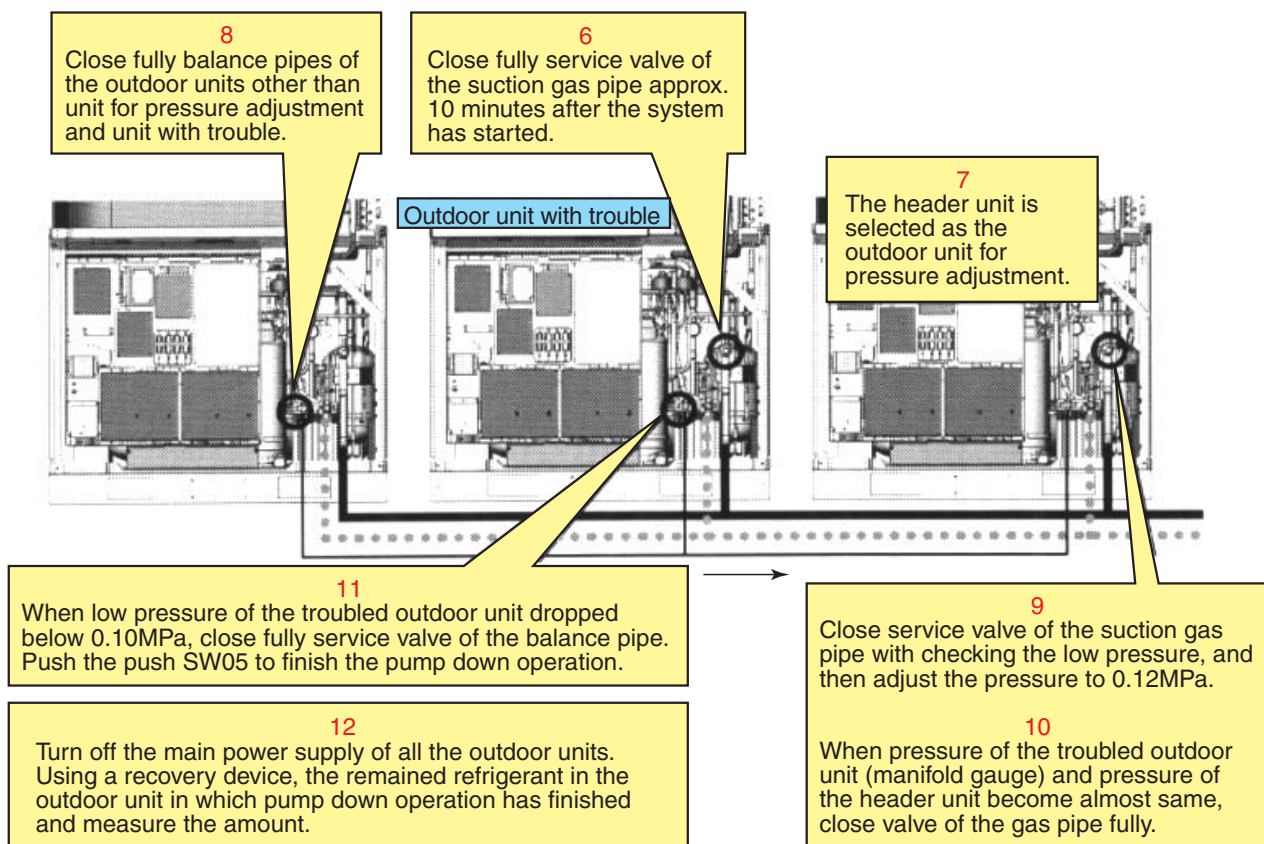
8. Keep only the balance pipes of the header unit and the troubled outdoor unit fully opened, and close fully the service valves of other outdoor unit balance pipes.

[Setup for header unit]

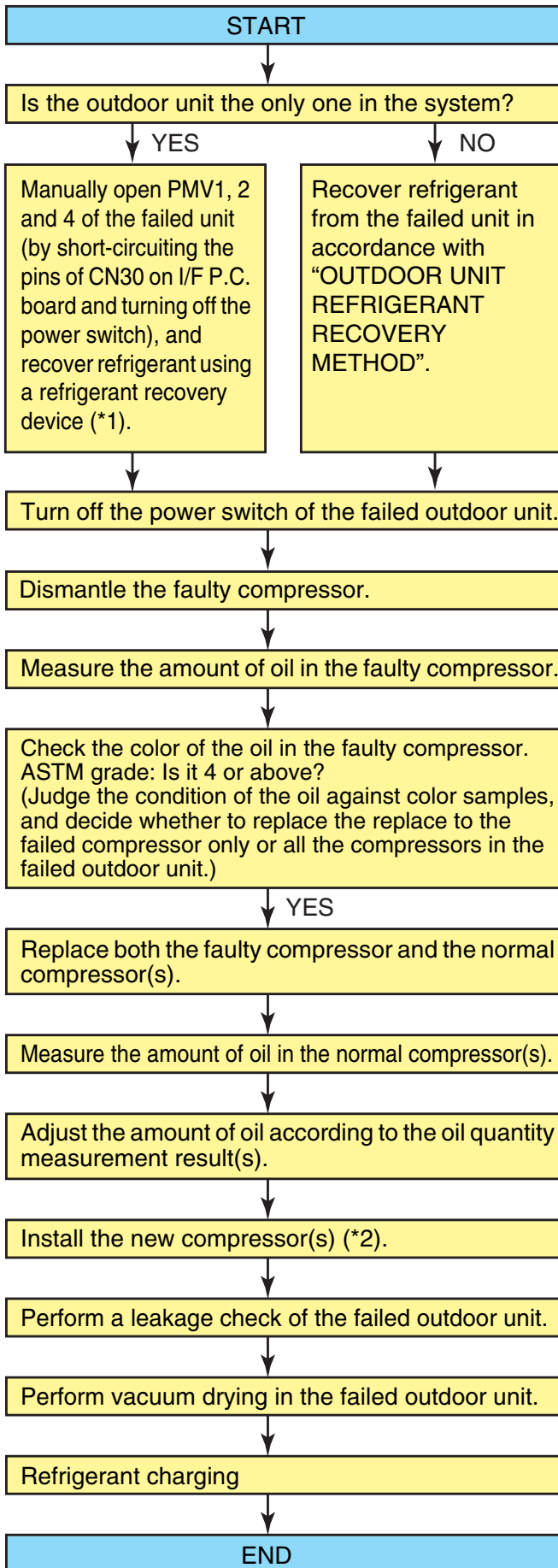
9. As the low-pressure data is displayed on 7-segment display section, close the service valves of the suction gas pipe gradually with confirming the pressure data, and then adjust so that the pressure becomes around 0.12MPa or equivalent.
10. When the manifold gauge pressure of the troubled outdoor unit has become almost same as with low pressure of the header unit, close fully the service valve of the gas pipe of the unit for pressure adjustment after operation for a while.

[Setup for the troubled outdoor unit]

11. When the manifold gauge pressure of the troubled outdoor unit becomes below 0.10MPa, close fully packed valve of the balance pipe and then push SW05 on the interface P.C. board to finish the pump-down operation.
12. Turn off the main power supplies of all the outdoor units, and use a refrigerant recovery device to recover the remaining refrigerant in the outdoor unit which the pump-down operation has completed. Be sure to measure the recovered refrigerant amount. (It is because addition of refrigerant corresponding to recovered amount is necessary after repair.)



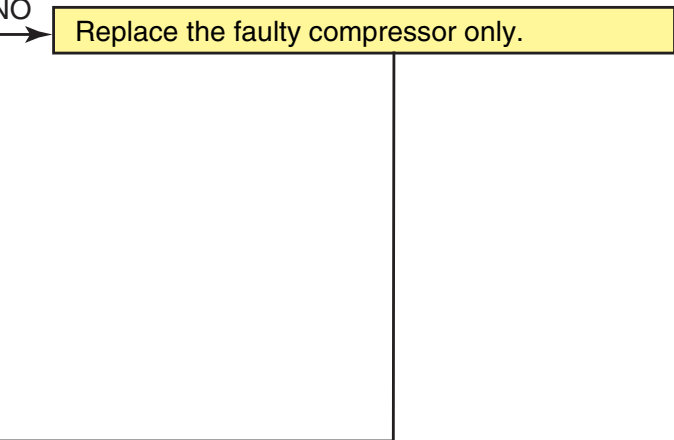
All of the refrigerant recovery work has finished.
Return all SW01/02/03 of the header unit to (1/1/1) to complete the work.



⚠ WARNING
 In situations such as indoor unit relocation and repairs, it is not possible to recover all the refrigerant held by the system in the outdoor units. It could cause a serious accident, such as blow out or injury. Be sure to perform refrigerant recovery using a refrigerant recovery device.

⚠ WARNING
 When detaching a pipe by heating with a burner a welded joint, take care as any oil left in the piping may burn in a momentary flash of fire when the weld filler metal melts.

- *1 The full-opening of PMV1, 2 and 4 via shortcircuiting of the CN30 pins is automatically undone after 2 minutes, causing the valves to fully close. To maintain fully open state, turn off the power switch of the outdoor unit within 2 minutes.
 - *2 The SHRM-i (4 series) and the SHRM (2 series) use different types of compressors. Be sure to check the service part code.
- This flowchart only shows the standard compressor replacement procedure. Since the situation can differ site by site, perform the task in accordance with the following judgment criteria:



- (1) New compressors are charged with 1900cc of oil per unit.
- (2) The amount of oil held by an outdoor unit is as shown below.
- (3) When a compressor is dismantled, it usually contains 800-1400cc oil.

| | | |
|---------------|-----------------|-----------------|
| | MAP0804*, 1004* | MAP1204*, 1404* |
| Amount of oil | 4300cc | 6700cc |

The amount of oil held by an oil separator is usually 0-1000cc for MAP0804*, MAP1004* and 0-1500cc for MAP1204* and MAP1404*.

Replacement of Compressors

<Checking color of oil in faulty compressor>

- Lay the faulty compressor down, draw a small amount of oil via the oil equalization pipe, and check its color against color samples.
- Determine the number of compressors to be replaced according to the color checking result.
ASTM grade: Below 4 → Replace the faulty compressor only.
ASTM grade: 4 or above → Replace both the faulty compressor and the normal compressor(s).

WARNING

When detaching a pipe by heating with a burner a welded joint, take care as any oil left in the piping may burn in a momentary flash of fire when the weld filler metal melts.

[When replacing faulty compressor only]

<Adjusting amount of oil in new compressor> (1900cc at shipment)

- Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], by following the steps below.

1 Amount of oil in faulty compressor A [cc]: $0 \leq A < 1000$

- (1) Adjust the amount of oil in the new compressor to 1000cc.
(Lay the new compressor down and draw 900 [cc] of oil via the oil-equalization pipe.)

Notes:

- Do not draw more than 900 [cc] of oil as it may cause damage to the compressor.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage".

2 Amount of oil in faulty compressor A [cc]: $1000 \leq A < 1900$

- (1) Adjust the amount of oil in the new compressor to A cc.
(Lay the new compressor down and draw (1900 - A) [cc] of oil via the oil equalization pipe.)

3 Amount of oil in faulty compressor A [cc]: $1900 \leq A$

- (1) Adjust the amount of oil in the new compressor to A cc.
(Insert a hose into the discharge pipe or oil equalization pipe of the new compressor and inject (A-1900) [cc] of oil using a funnel, etc.)

[When replacing normal as well as faulty compressor] - applicable to **MMY-MAP0804*** and **1004***
 <Dismantling normal compressor>

- Dismantle the normal compressor in the same way as the faulty compressor.

Note:

- Be sure to insulate the removed compressor leads using insulation tape, etc.

⚠ WARNING

When detaching a pipe by heating with a burner a welded joint, take care as any oil left in the piping may burn in a momentary flash of fire when the weld filler metal melts.

<Measuring amount of oil in normal compressor>

- As was the case with the faulty compressor, measure the amount of oil contained by placing the compressor on a scale.

Amount of oil in normal compressor: $B \text{ [cc]} = (\text{Weight of compressor as it was dismantled (kg)} - 22.7) \times 1042$
 (Specific volume of oil: 1042 [cc/kg])

Note:

- When a compressor is empty, it weighs 22.7kg.

<Adjusting amount of oil in new compressors>

- Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], and how much oil the normal compressor contained, B [cc], by following the steps below.

1 Combined amount of oil in faulty and normal compressors $A+B$ [cc]: $0 \leq A+B < 2000$

(1) Adjust the amount of oil in the two new compressors to 1000cc each (total 2000cc).

- Lay the compressors down and draw 900 [cc] of oil from each of them via their oil equalization pipes.

Notes:

- Do not draw more than 900 [cc] of oil from a compressor as it may cause damage.

• If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "1 1-3. Check Procedure to Search Cause of Compressor Oil Shortage" in SERVICE MANUAL.

2 Combined amount of oil in faulty and normal compressors $A+B$ [cc]: $2000 \leq A+B < 3800$

(1) Adjust the amount of oil in the two new compressors to $(A+B)/2$ cc each.

- Lay the compressors down and draw $[3800-(A+B)]/2$ [cc] of oil from each of them via their oil equalization pipes.

3 Combined amount of oil in faulty and normal compressors $A+B$ [cc]: $3800 \leq A+B$

(1) Adjust the amount of oil in the two new compressors to $(A+B)/2$ cc each.

(Insert a hose into the discharge pipe or oil equalization pipe of each compressor and inject $(A+B)/2-1900$ [cc] of oil using a funnel, etc.)

[When replacing normal as well as faulty compressors] - applicable to **MMY-MAP1204*** and **1404***

<Dismantling normal compressors>

- Dismantle the normal compressors in the same way as the faulty compressor.

Note:

- Be sure to insulate the removed compressor leads using insulation tape, etc.

WARNING

When detaching a pipe by heating with a burner a welded joint, take care as any oil left in the piping may burn in a momentary flash of fire when the weld filler metal melts.

<Measuring amounts of oil in normal compressors>

- As was the case with the faulty compressor, measure the amount of oil contained by placing each compressor on a scale.

Amount of oil in normal compressor: $B, C \text{ [cc]} = (\text{Weight of compressor as it was dismantled (kg)} - 22.7) \times 1042$
(Specific volume of oil: 1042 [cc/kg])

Note:

- When a compressor is empty, it weighs 22.7kg.

<Adjusting amount of oil in new compressors>

- Perform the adjustment on the basis of how much oil the faulty compressor contained, A [cc], and how much oil the normal compressors contained, B and C [cc], by following the steps below.

1 Combined amount of oil in faulty compressor and two normal compressors

$A+B+C \text{ [cc]: } 0 \leq A+B+C < 3000$

- (1) Adjust the amount of oil in the three new compressors to 1000cc each (total 3000cc).
 - Lay the compressors down and draw 900 [cc] of oil from each of them via their oil equalization pipes.

Notes:

- Do not draw more than 900 [cc] of oil from a compressor as it may cause damage.
- If the faulty compressor contained 500cc or less, there may have been a problem with the oil equalization circuit, etc. Perform checks in accordance with "11-3. Check Procedure to Search Cause of Compressor Oil Shortage" in SERVICE MANUAL.

2 Combined amount of oil in faulty compressor and two normal compressors

$A+B+C \text{ [cc]: } 3000 \leq A+B+C < 5700$

- (1) Adjust the amount of oil in the three new compressors to $(A+B+C)/3$ cc each.
 - Lay the compressors down and draw $[5700-(A+B+C)]/3$ [cc] of oil from each of them via their oil equalization pipes.

3 Combined amount of oil in faulty compressor and two normal compressors

$A+B+C \text{ [cc]: } 5700 \leq A+B+C$

- (1) Adjust the amount of oil in the three new compressors to $(A+B+C)/3$ cc each.
(Insert a hose into the discharge pipe or oil equalization pipe of each compressor and inject $(A+B+C)/3-1900$ [cc] of oil using a funnel, etc.)

<Installing compressor>

- Install a compressor by following the dismantling procedure in reverse.

WARNING

The dismantling process may have loosened compressor leads and faston connectors. Prior to installation, therefore, tighten them a little with a pair of pliers, and verify that they are tight after reconnection.

Notes:

- Although a compressor is provided with only two hexagonal bolts, it is standard.
- The tightening torque of the hexagonal bolts, used to mount the compressor, is 200kg/cm.
- If oil has been drawn from the accumulator, repair the cut pipe through pinching and brazing.

<Vacuum-pumping>

(Single outdoor unit system)

- Before performing vacuum-pumping, fully open PMV1, 2 and 4. If they are closed, the heat exchangers of the outdoor unit cannot be vacuum-pumped.
- Connect a vacuum pump consecutively to the check joints placed in the liquid and discharge pipes and on the high-pressure side of the suction pipe, and turn it on.
- Operate the vacuum drying until the vacuum gauge indicates 1 mmHg.

<Method to fully open PMV manually>

- (1) Turn on the power switch of the outdoor unit.
- (2) With the Bits 1 and 2 of SW12 set to off, short-circuit the pins of CN30.
- (3) Disconnect the connectors of PMV1 and 2 from the I/F P.C. board.
- (4) With the Bits 1 and 2 of SW12 set to off and on, respectively, short-circuit the pins of CN30.
- (5) Disconnect the connector of PMV4 from the I/F P.C. board
- (6) Turn off the power switch of the outdoor unit.

<Refrigerant charging>

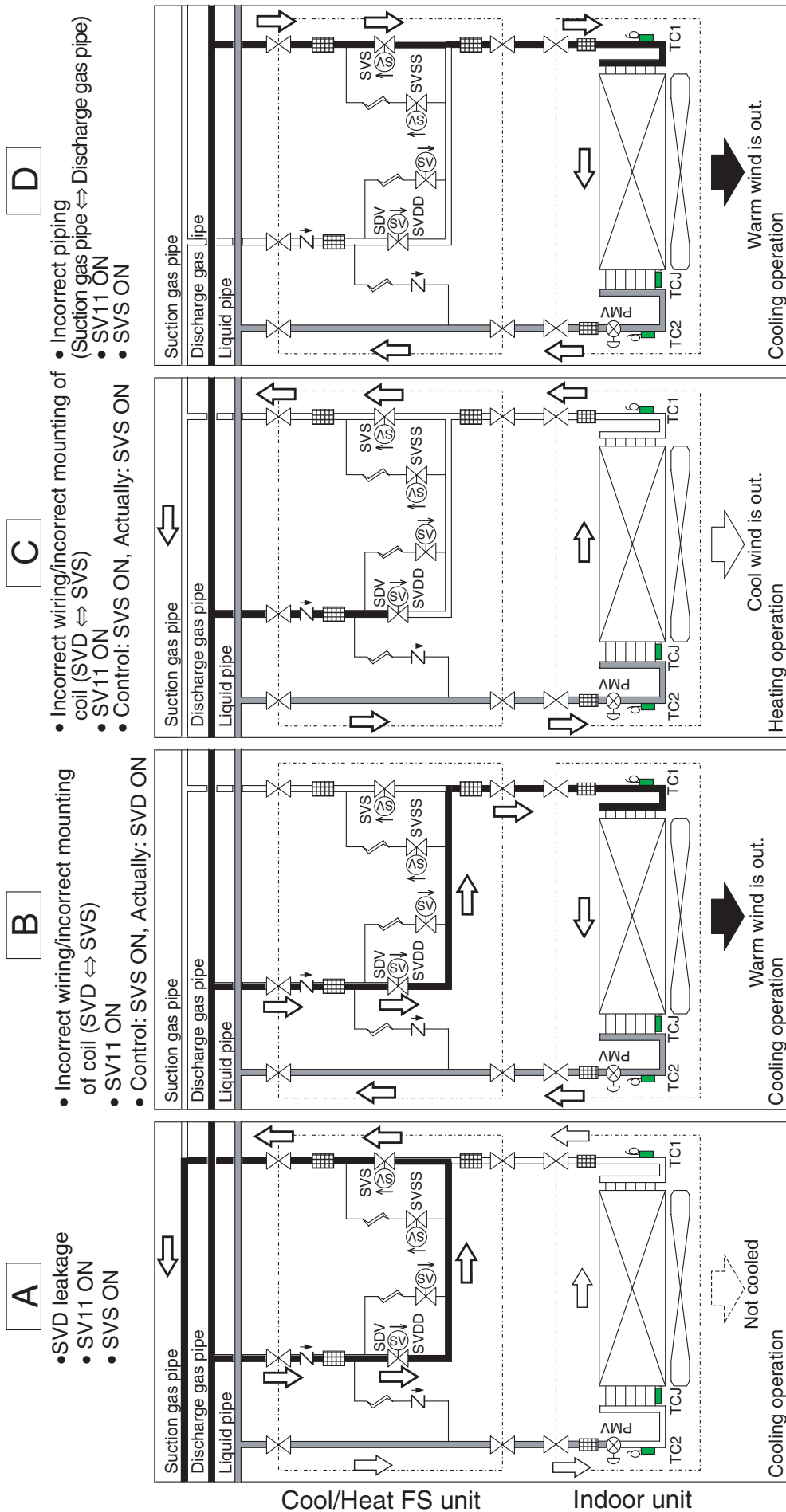
- Inject the same amount of refrigerant as the recovered residual refrigerant via the charging port of the liquidside service valve.

Leakage of SVD valve or SVS valve, etc.; Positions to be checked and check code when a trouble such as miswiring occurred.

| Part name | Trouble mode | Operation mode | Phenomenon which appears as result (Corresponding indoor unit or flow selector unit) | | | | Judgment and position to be checked | Example of refrigerant flow |
|---|--|--|--|-----------------------|-----------------------------------|--|--|-----------------------------|
| | | | Not cooled | Not heated | May become almost normal capacity | Abnormal refrigerant sound ● Circulating sound |  |  | Detection of check code |
| SVD valve | Clogging | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • TC1 is lower than normal indoor unit. • Temperature of gas pipe at indoor side of the flow selector unit is lower than that of normal FS unit. | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • Compared with normal indoor unit, TCJ is higher. • Suction gas pipe at outdoor side of the flow selector unit is hot. • Refrigerant circulating sound is heard in bypass from SVD valve to SVS valve. | A |
| | Miswiring/ Misinstallation of coil SVD ↔ SVS | Single cooling (SV11 OFF) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • TCJ is higher than normal indoor unit. • Gas pipe at indoor side of the flow selector unit is not cold. • Refrigerant circulating sound is heard from SVSS valve. | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • Temperature of TCJ and TC1 become high similar to heating. (All heating circuit) • Discharge gas pipe at outdoor unit side of the flow selector unit is rather hot. • Refrigerant circulating sound is not heard from SVS valve, but it is heard from SVD valve. | B |
| | | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • Gas pipe at indoor side of the flow selector unit is cold. (Cooling circuit, Liquid pack) • Refrigerant circulating sound is not heard from SVD valve, but it is heard from SVS valve. | C |
| | | Single cooling Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • TCJ is higher than normal indoor unit. • Gas pipe at indoor side of the flow selector unit is not cold. • Refrigerant circulating sound is heard from SVSS valve. | |
| SVS valve | Clogging | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • P19 "4-way valve reversal error" | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | | <input type="radio"/> | <ul style="list-style-type: none"> • Compared with normal indoor unit, TCJ is low. • Temperature of suction gas pipe at outdoor side of the flow selector unit is higher than that of normal flow selector unit. • Refrigerant circulating sound is heard from SVS valve circuit. | |
| | Leakage | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | <input type="radio"/> | <input checked="" type="radio"/> | <ul style="list-style-type: none"> • In start time, when exchanging mode from cooling to heating after defrost operation, refrigerant shock sound may be heard. | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | <input type="radio"/> | <input type="radio"/> | <ul style="list-style-type: none"> • Refrigerant circulating sound may be heard from SVDD valve circuit. • Suction gas pipe at outdoor unit side of the flow selector unit may be hot. | |
| | | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | <input type="radio"/> | <input type="radio"/> | <ul style="list-style-type: none"> • Refrigerant circulating sound may be heard from SVDD valve circuit. | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | <input type="radio"/> | <input type="radio"/> | <ul style="list-style-type: none"> • Refrigerant circulating sound may be heard from SVDD valve circuit. • Suction gas pipe at outdoor unit side of the flow selector unit may be hot. | |
| Miswiring/ Misinstallation of coil SVD ↔ SVS | Single heating Simultaneous cooling (Room heating) Simultaneous heating (Room heating) | <input type="radio"/> | | <input type="radio"/> | <input checked="" type="radio"/> | <ul style="list-style-type: none"> • In start time, when exchanging mode from cooling to heating after defrost operation, refrigerant shock sound may be heard. | | |
| | Single cooling (SV11 ON) Simultaneous cooling (Room cooling) Simultaneous heating (Room cooling) | <input type="radio"/> | | <input type="radio"/> | <input type="radio"/> | <ul style="list-style-type: none"> • Refrigerant circulating sound may be heard from SVDD valve circuit. | | |

| Part name | Trouble mode | Operation mode | Phenomenon which appears as result (Corresponding indoor unit or flow selector unit) | | | | Judgment and position to be checked | Example of refrigerant flow |
|---|--|--|---|-----------------------|-----------------------------------|---|--|-----------------------------|
| | | | Not cooled | Not heated | May become almost normal capacity | Abnormal refrigerant sound ● Circulating sound |  |  | Detection of check code |
| SVSS valve | Clogging | Single cooling Simultaneous cooling (Indoor cooling) Simultaneous heating (Indoor cooling) | | | <input type="radio"/> | ● Indoor unit, flow selector unit | • Operation is changed from heating to cooling. | |
| | | Single heating Simultaneous cooling (Indoor heating) Simultaneous heating (Indoor heating) | | | <input type="radio"/> | ● Indoor unit, flow selector unit | • Refrigerant i impact sound is heard at defrost time. | |
| Discharge. Liquid bypass capillary, Check valve | Leakage | Single heating Simultaneous cooling (Indoor heating) Simultaneous heating (Indoor heating) | | | <input type="radio"/> | ○ SVSS circuit | • Refrigerant sound may be heard from SVSS valve circuit. • Temperature of suction gas pipe at outdoor side of the selector unit is higher than that of normal selector unit. | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Indoor cooling) Simultaneous heating (Indoor cooling) | <input type="radio"/> | | | | • Gas short is observed and PD and PS may be lower than those in normal time. • TD and TS may be higher than those in normal time. | |
| Piping Discharge pipe Liquid pipe Gas pipe | Check valve leakage | Single heating Simultaneous cooling (Indoor heating) Simultaneous heating (Indoor heating) | | <input type="radio"/> | | | P15 [Gas leak detection] | |
| | | Single cooling (SV11 OFF) | <input type="radio"/> | | | ○ Check valve circuit | • Refrigerant sound may be heard from check valve. • Discharge gas pipe is cold or it may be frozen. | |
| Communication line Power supply line | Incorrect piping Discharge pipe ↔ Suction gas pipe | Single cooling (SV11 OFF) | | | <input type="radio"/> | | • Impossible judgment | |
| | | Single cooling (SV11 ON) Simultaneous cooling (Indoor cooling) Simultaneous heating (Indoor cooling) | | | | | • TCJ and TC1 are heated same as heating. (Heating circuit) • Suction gas pipe at outdoor side of selector unit is fairly heated. | D |
| | | Single heating Simultaneous cooling (Indoor heating) Simultaneous heating (Indoor heating) | | | <input type="radio"/> | | • Temperature of suction gas pipe at outdoor side of the FS unit is higher than that of the normal FS unit. | |
| In some cases, phenomena such as above occur. | | | | | | | | |

<REFERENCE> An Example of Refrigerant Flow in FS Unit When Trouble Occurred



Troubleshooting when Multiple Indoor Units are Connected to Cool/Heat FS Unit

When multiple indoor units are connected to a Cool/Heat FS unit, it is necessary to set the Code No. [0E]. If this setting is forgotten, normal operation is impossible.

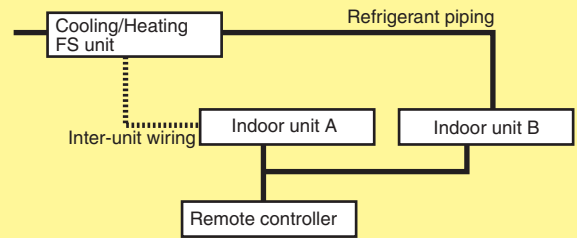
[Case that Code No. [0E] is set]

All the indoor units which are connected to the identical Cool/Heat FS unit operate according to the operation mode of the center unit. The Cool/Heat FS unit keeps the operation mode until all the indoor units will be thermostat-OFF.

[Case that Code No. [0E] is not set]

As the Cool/Heat FS unit is controlled by the indoor unit which is connected with inter-unit wiring, a normal operation is unavailable.

(In the right figure, operation follows to the indoor unit A.)



Connection to remote controller group only is available.
Remote controller individual to each indoor unit is unavailable.

If Code No. [0E] is not set, the symptom below appears:

When the following trouble occurred, confirm the Code No. [0E] and then set the Code No. referring to item "How to connect multiple indoor units to a Cool/Heat FS unit".

[1] [Cool] is set on remote controller

| | Indoor unit A | Indoor unit B | Cool/Heat FS unit | | | | Symptom |
|---|--------------------|--------------------|-------------------|------|-----|------|---|
| | | | SVS | SVSS | SVD | SVDD | |
| 1 | Cooling operation | Cooling operation | ON | ON | OFF | OFF | Normal operation |
| 2 | Cooling operation | Cooling thermo-OFF | ON | ON | OFF | OFF | Normal operation |
| 3 | Cooling thermo-OFF | Cooling operation | OFF | ON | OFF | OFF | Cooling mode is not applied to the indoor unit B. (Fan status) [H06] An error (Low-pressure protective operation) may occur. |

[2] [Heat] is set on remote controller

| | Indoor unit A | Indoor unit B | Cool/Heat FS unit | | | | Symptom |
|---|--------------------|--------------------|-------------------|------|-----|------|-------------------|
| | | | SVS | SVSS | SVD | SVDD | |
| 1 | Heating operation | Heating operation | OFF | OFF | ON | OFF | Normal operation. |
| 2 | Heating operation | Heating thermo-OFF | OFF | OFF | ON | OFF | Normal operation. |
| 3 | Heating thermo-OFF | Heating operation | OFF | OFF | ON | OFF | Normal operation. |

[3] [Cool/Heat Auto] is set on remote controller

| | Indoor unit A | Indoor unit B | Cool/Heat FS unit | | | | Symptom |
|----|--------------------|--------------------|-------------------|------|-----|------|--|
| | | | SVS | SVSS | SVD | SVDD | |
| 1 | Cooling operation | Cooling operation | ON | ON | OFF | OFF | Normal operation. |
| 2 | Cooling operation | Cooling thermo-OFF | ON | ON | OFF | OFF | Normal operation. |
| 3 | Cooling operation | Heating operation | ON | ON | OFF | OFF | Indoor unit [L18] error (Cool/Heat FS unit line error) |
| 4 | Cooling thermo-OFF | Cooling operation | OFF | ON | OFF | OFF | Heating mode is not applied to the indoor unit B. (Fan status) [H06] An error (Low-pressure protective operation) may occur. |
| 5 | Cooling thermo-OFF | Heating operation | OFF | ON | OFF | OFF | Heating mode is not applied to the indoor unit B. (Fan or stop status) [P20] An error (High-pressure protective operation) may occur. |
| 6 | Heating operation | Heating operation | OFF | OFF | ON | OFF | Normal operation. |
| 7 | Heating operation | Heating thermo-OFF | OFF | OFF | ON | OFF | Normal operation. |
| 8 | Heating operation | Cooling operation | OFF | OFF | ON | OFF | Indoor unit B discharges warm wind. |
| 9 | Heating thermo-OFF | Heating operation | OFF | OFF | ON | OFF | Normal operation. |
| 10 | Heating thermo-OFF | Cooling operation | OFF | OFF | ON | OFF | Indoor unit B discharges warm wind. |

Pressure Sensor Output Check

Outdoor Unit

▼ Pd sensor characteristics

0 to 4.41 MPa (0.5 to 5V output for 0 to 4.41 MPa)

Voltage readings across pins 2 and 3 of CN501 on indoor unit main P.C. board (with negative-side probe of multimeter placed on pin 3)

| VOLT | Pd (MPa) | Pd (kg/cm ²) | VOLT | Pd (MPa) | Pd (kg/cm ²) | VOLT | Pd (MPa) | Pd (kg/cm ²) | VOLT | Pd (MPa) | Pd (kg/cm ²) | VOLT | Pd (MPa) | Pd (kg/cm ²) |
|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|
| 0.00 | 0.00 | 0.0 | 1.00 | 0.49 | 5.0 | 1.99 | 1.46 | 14.9 | 2.99 | 2.44 | 24.9 | 3.98 | 3.42 | 34.8 |
| 0.02 | 0.00 | 0.0 | 1.02 | 0.51 | 5.2 | 2.01 | 1.48 | 15.1 | 3.01 | 2.46 | 25.1 | 4.00 | 3.44 | 35.0 |
| 0.04 | 0.00 | 0.0 | 1.04 | 0.53 | 5.4 | 2.03 | 1.50 | 15.3 | 3.03 | 2.48 | 25.3 | 4.02 | 3.45 | 35.2 |
| 0.06 | 0.00 | 0.0 | 1.06 | 0.54 | 5.5 | 2.05 | 1.52 | 15.5 | 3.05 | 2.50 | 25.5 | 4.04 | 3.48 | 35.4 |
| 0.08 | 0.00 | 0.0 | 1.07 | 0.56 | 5.7 | 2.07 | 1.54 | 15.7 | 3.07 | 2.52 | 25.7 | 4.06 | 3.49 | 35.6 |
| 0.10 | 0.00 | 0.0 | 1.09 | 0.58 | 5.9 | 2.09 | 1.56 | 15.9 | 3.09 | 2.54 | 25.9 | 4.08 | 3.51 | 35.8 |
| 0.12 | 0.00 | 0.0 | 1.11 | 0.60 | 6.1 | 2.11 | 1.58 | 16.1 | 3.11 | 2.56 | 26.1 | 4.10 | 3.53 | 36.0 |
| 0.14 | 0.00 | 0.0 | 1.13 | 0.62 | 6.3 | 2.13 | 1.60 | 16.3 | 3.13 | 2.57 | 26.3 | 4.12 | 3.55 | 36.2 |
| 0.16 | 0.00 | 0.0 | 1.15 | 0.64 | 6.5 | 2.15 | 1.62 | 16.5 | 3.15 | 2.59 | 26.4 | 4.14 | 3.57 | 36.4 |
| 0.18 | 0.00 | 0.0 | 1.17 | 0.66 | 6.7 | 2.17 | 1.64 | 16.7 | 3.16 | 2.61 | 26.6 | 4.16 | 3.59 | 36.6 |
| 0.20 | 0.00 | 0.0 | 1.19 | 0.68 | 6.9 | 2.19 | 1.66 | 16.9 | 3.18 | 2.63 | 26.8 | 4.18 | 3.61 | 36.8 |
| 0.22 | 0.00 | 0.0 | 1.21 | 0.70 | 7.1 | 2.21 | 1.67 | 17.1 | 3.20 | 2.65 | 27.0 | 4.20 | 3.63 | 37.0 |
| 0.23 | 0.00 | 0.0 | 1.23 | 0.72 | 7.3 | 2.23 | 1.69 | 17.3 | 3.22 | 2.67 | 27.2 | 4.22 | 3.65 | 37.2 |
| 0.25 | 0.00 | 0.0 | 1.25 | 0.74 | 7.5 | 2.25 | 1.71 | 17.5 | 3.24 | 2.69 | 27.4 | 4.24 | 3.67 | 37.4 |
| 0.27 | 0.00 | 0.0 | 1.27 | 0.76 | 7.7 | 2.27 | 1.73 | 17.7 | 3.26 | 2.71 | 27.6 | 4.26 | 3.69 | 37.6 |
| 0.29 | 0.00 | 0.0 | 1.29 | 0.77 | 7.9 | 2.29 | 1.75 | 17.9 | 3.28 | 2.73 | 27.8 | 4.28 | 3.70 | 37.8 |
| 0.31 | 0.00 | 0.0 | 1.31 | 0.79 | 8.1 | 2.31 | 1.77 | 18.0 | 3.30 | 2.75 | 28.0 | 4.30 | 3.72 | 38.0 |
| 0.33 | 0.00 | 0.0 | 1.33 | 0.81 | 8.3 | 2.32 | 1.79 | 18.2 | 3.32 | 2.77 | 28.2 | 4.32 | 3.74 | 38.2 |
| 0.35 | 0.00 | 0.0 | 1.35 | 0.83 | 8.5 | 2.34 | 1.81 | 18.4 | 3.34 | 2.79 | 28.4 | 4.34 | 3.76 | 38.4 |
| 0.37 | 0.00 | 0.0 | 1.37 | 0.85 | 8.7 | 2.36 | 1.83 | 18.6 | 3.36 | 2.80 | 28.6 | 4.36 | 3.78 | 38.6 |
| 0.39 | 0.00 | 0.0 | 1.39 | 0.87 | 8.9 | 2.38 | 1.85 | 18.8 | 3.38 | 2.82 | 28.8 | 4.38 | 3.80 | 38.8 |
| 0.41 | 0.00 | 0.0 | 1.41 | 0.89 | 9.1 | 2.40 | 1.87 | 19.0 | 3.40 | 2.84 | 29.0 | 4.40 | 3.82 | 38.9 |
| 0.43 | 0.00 | 0.0 | 1.43 | 0.91 | 9.3 | 2.42 | 1.89 | 19.2 | 3.42 | 2.86 | 29.2 | 4.41 | 3.84 | 39.1 |
| 0.45 | 0.00 | 0.0 | 1.45 | 0.93 | 9.5 | 2.44 | 1.90 | 19.4 | 3.44 | 2.88 | 29.4 | 4.43 | 3.86 | 39.3 |
| 0.47 | 0.00 | 0.0 | 1.47 | 0.95 | 9.6 | 2.46 | 1.92 | 19.6 | 3.46 | 2.90 | 29.6 | 4.45 | 3.88 | 39.5 |
| 0.49 | 0.00 | 0.0 | 1.48 | 0.97 | 9.8 | 2.48 | 1.94 | 19.8 | 3.48 | 2.92 | 29.8 | 4.47 | 3.90 | 39.7 |
| 0.51 | 0.01 | 0.1 | 1.50 | 0.99 | 10.0 | 2.50 | 1.96 | 20.0 | 3.50 | 2.94 | 30.0 | 4.49 | 3.92 | 39.9 |
| 0.53 | 0.03 | 0.3 | 1.52 | 1.00 | 10.2 | 2.52 | 1.98 | 20.2 | 3.52 | 2.96 | 30.2 | 4.51 | 3.93 | 40.1 |
| 0.55 | 0.05 | 0.5 | 1.54 | 1.02 | 10.4 | 2.54 | 2.00 | 20.4 | 3.54 | 2.98 | 30.4 | 4.53 | 3.95 | 40.3 |
| 0.57 | 0.07 | 0.7 | 1.56 | 1.04 | 10.6 | 2.56 | 2.02 | 20.6 | 3.56 | 3.00 | 30.5 | 4.55 | 3.97 | 40.5 |
| 0.59 | 0.08 | 0.9 | 1.58 | 1.06 | 10.8 | 2.58 | 2.04 | 20.8 | 3.57 | 3.02 | 30.7 | 4.57 | 3.99 | 40.7 |
| 0.61 | 0.10 | 1.1 | 1.60 | 1.08 | 11.0 | 2.60 | 2.06 | 21.0 | 3.59 | 3.03 | 30.9 | 4.59 | 4.01 | 40.9 |
| 0.63 | 0.12 | 1.3 | 1.62 | 1.10 | 11.2 | 2.62 | 2.08 | 21.2 | 3.61 | 3.05 | 31.1 | 4.61 | 4.03 | 41.1 |
| 0.65 | 0.14 | 1.4 | 1.64 | 1.12 | 11.4 | 2.64 | 2.10 | 21.4 | 3.63 | 3.07 | 31.3 | 4.63 | 4.05 | 41.3 |
| 0.66 | 0.16 | 1.6 | 1.66 | 1.14 | 11.6 | 2.66 | 2.12 | 21.6 | 3.65 | 3.09 | 31.5 | 4.65 | 4.07 | 41.5 |
| 0.68 | 0.18 | 1.8 | 1.68 | 1.16 | 11.8 | 2.68 | 2.13 | 21.8 | 3.67 | 3.11 | 31.7 | 4.67 | 4.09 | 41.7 |
| 0.70 | 0.20 | 2.0 | 1.70 | 1.18 | 12.0 | 2.70 | 2.15 | 22.0 | 3.69 | 3.13 | 31.9 | 4.69 | 4.11 | 41.9 |
| 0.72 | 0.22 | 2.2 | 1.72 | 1.20 | 12.2 | 2.72 | 2.17 | 22.2 | 3.71 | 3.15 | 32.1 | 4.71 | 4.13 | 42.1 |
| 0.74 | 0.24 | 2.4 | 1.74 | 1.21 | 12.4 | 2.73 | 2.19 | 22.3 | 3.73 | 3.17 | 32.3 | 4.73 | 4.15 | 42.3 |
| 0.76 | 0.26 | 2.6 | 1.76 | 1.23 | 12.6 | 2.75 | 2.21 | 22.5 | 3.75 | 3.19 | 32.5 | 4.75 | 4.16 | 42.5 |
| 0.78 | 0.28 | 2.8 | 1.78 | 1.25 | 12.8 | 2.77 | 2.23 | 22.7 | 3.77 | 3.21 | 32.7 | 4.77 | 4.18 | 42.7 |
| 0.80 | 0.30 | 3.0 | 1.80 | 1.27 | 13.0 | 2.79 | 2.25 | 22.9 | 3.79 | 3.23 | 32.9 | 4.79 | 4.20 | 42.9 |
| 0.82 | 0.31 | 3.2 | 1.82 | 1.29 | 13.2 | 2.81 | 2.27 | 23.1 | 3.81 | 3.25 | 33.1 | 4.81 | 4.22 | 43.0 |
| 0.84 | 0.33 | 3.4 | 1.84 | 1.31 | 13.4 | 2.83 | 2.29 | 23.3 | 3.83 | 3.26 | 33.3 | 4.82 | 4.24 | 43.2 |
| 0.86 | 0.35 | 3.6 | 1.86 | 1.33 | 13.6 | 2.85 | 2.31 | 23.5 | 3.85 | 3.28 | 33.5 | 4.84 | 4.26 | 43.4 |
| 0.88 | 0.37 | 3.8 | 1.88 | 1.35 | 13.8 | 2.87 | 2.33 | 23.7 | 3.89 | 3.30 | 33.7 | 4.86 | 4.28 | 43.6 |
| 0.90 | 0.39 | 4.0 | 1.90 | 1.37 | 13.9 | 2.89 | 2.35 | 23.9 | 3.89 | 3.32 | 33.9 | 4.88 | 4.30 | 43.8 |
| 0.92 | 0.41 | 4.2 | 1.91 | 1.39 | 14.1 | 2.91 | 2.36 | 24.1 | 3.91 | 3.34 | 34.1 | 4.90 | 4.32 | 44.0 |
| 0.94 | 0.43 | 4.4 | 1.93 | 1.41 | 14.3 | 2.93 | 2.38 | 24.3 | 3.93 | 3.36 | 34.3 | 4.92 | 4.34 | 44.2 |
| 0.96 | 0.45 | 4.6 | 1.95 | 1.43 | 14.5 | 2.95 | 2.40 | 24.5 | 3.95 | 3.38 | 34.5 | 4.94 | 4.36 | 44.4 |
| 0.98 | 0.47 | 4.8 | 1.97 | 1.44 | 14.7 | 2.97 | 2.42 | 24.7 | 3.97 | 3.40 | 34.7 | 4.96 | 4.38 | 44.6 |
| | | | | | | | | | | | | 4.98 | 4.39 | 44.8 |

Outdoor Unit

▼ Ps sensor characteristics

0 to 1.47 MPa (0.5 to 5V output for 0 to 1.47 MPa)

Voltage readings across pins 2 and 3 of CN500 on indoor unit main P.C. board (with negative-side probe of multimeter placed on pin 3)

| VOLT | Ps (MPa) | Ps (kg/cm ²) | VOLT | Ps (MPa) | Ps (kg/cm ²) | VOLT | Ps (MPa) | Ps (kg/cm ²) | VOLT | Ps (MPa) | Ps (kg/cm ²) | VOLT | Ps (MPa) | Ps (kg/cm ²) |
|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|------|----------|--------------------------|
| 0.00 | 0.00 | 0.0 | 1.00 | 0.16 | 1.7 | 1.99 | 0.49 | 5.0 | 2.99 | 0.81 | 8.3 | 3.98 | 1.14 | 11.6 |
| 0.02 | 0.00 | 0.0 | 1.02 | 0.17 | 1.7 | 2.01 | 0.49 | 5.0 | 3.01 | 0.82 | 8.4 | 4.00 | 1.15 | 11.7 |
| 0.04 | 0.00 | 0.0 | 1.04 | 0.18 | 1.8 | 2.03 | 0.50 | 5.1 | 3.03 | 0.83 | 8.4 | 4.02 | 1.15 | 11.7 |
| 0.06 | 0.00 | 0.0 | 1.06 | 0.18 | 1.8 | 2.05 | 0.51 | 5.2 | 3.05 | 0.83 | 8.5 | 4.04 | 1.16 | 11.8 |
| 0.08 | 0.00 | 0.0 | 1.07 | 0.19 | 1.9 | 2.07 | 0.51 | 5.2 | 3.07 | 0.84 | 8.6 | 4.06 | 1.17 | 11.9 |
| 0.10 | 0.00 | 0.0 | 1.09 | 0.19 | 2.0 | 2.09 | 0.52 | 5.3 | 3.09 | 0.85 | 8.6 | 4.08 | 1.17 | 11.9 |
| 0.12 | 0.00 | 0.0 | 1.11 | 0.20 | 2.0 | 2.11 | 0.53 | 5.4 | 3.11 | 0.85 | 8.7 | 4.10 | 1.18 | 12.0 |
| 0.14 | 0.00 | 0.0 | 1.13 | 0.21 | 2.1 | 2.13 | 0.53 | 5.4 | 3.13 | 0.86 | 8.8 | 4.12 | 1.18 | 12.1 |
| 0.16 | 0.00 | 0.0 | 1.15 | 0.21 | 2.2 | 2.15 | 0.54 | 5.5 | 3.15 | 0.86 | 8.8 | 4.14 | 1.19 | 12.1 |
| 0.18 | 0.00 | 0.0 | 1.17 | 0.22 | 2.2 | 2.17 | 0.55 | 5.6 | 3.16 | 0.87 | 8.9 | 4.16 | 1.20 | 12.2 |
| 0.20 | 0.00 | 0.0 | 1.19 | 0.23 | 2.3 | 2.19 | 0.55 | 5.6 | 3.18 | 0.88 | 8.9 | 4.18 | 1.20 | 12.3 |
| 0.22 | 0.00 | 0.0 | 1.21 | 0.23 | 2.4 | 2.21 | 0.56 | 5.7 | 3.20 | 0.88 | 9.0 | 4.20 | 1.21 | 12.3 |
| 0.23 | 0.00 | 0.0 | 1.23 | 0.24 | 2.4 | 2.23 | 0.56 | 5.8 | 3.22 | 0.89 | 9.1 | 4.22 | 1.22 | 12.4 |
| 0.25 | 0.00 | 0.0 | 1.25 | 0.25 | 2.5 | 2.25 | 0.57 | 5.8 | 3.24 | 0.90 | 9.1 | 4.24 | 1.22 | 12.5 |
| 0.27 | 0.00 | 0.0 | 1.27 | 0.25 | 2.6 | 2.27 | 0.58 | 5.9 | 3.26 | 0.90 | 9.2 | 4.26 | 1.23 | 12.5 |
| 0.29 | 0.00 | 0.0 | 1.29 | 0.26 | 2.6 | 2.29 | 0.58 | 6.0 | 3.28 | 0.91 | 9.3 | 4.28 | 1.24 | 12.6 |
| 0.31 | 0.00 | 0.0 | 1.31 | 0.26 | 2.7 | 2.31 | 0.59 | 6.0 | 3.30 | 0.92 | 9.3 | 4.30 | 1.24 | 12.7 |
| 0.33 | 0.00 | 0.0 | 1.33 | 0.27 | 2.8 | 2.32 | 0.60 | 6.1 | 3.32 | 0.92 | 9.4 | 4.32 | 1.25 | 12.7 |
| 0.35 | 0.00 | 0.0 | 1.35 | 0.28 | 2.8 | 2.34 | 0.60 | 6.1 | 3.34 | 0.93 | 9.5 | 4.34 | 1.25 | 12.8 |
| 0.37 | 0.00 | 0.0 | 1.37 | 0.28 | 2.9 | 2.36 | 0.61 | 6.2 | 3.36 | 0.94 | 9.5 | 4.36 | 1.26 | 12.9 |
| 0.39 | 0.00 | 0.0 | 1.39 | 0.29 | 3.0 | 2.38 | 0.62 | 6.3 | 3.38 | 0.94 | 9.6 | 4.38 | 1.27 | 12.9 |
| 0.41 | 0.00 | 0.0 | 1.41 | 0.30 | 3.0 | 2.40 | 0.62 | 6.3 | 3.40 | 0.95 | 9.7 | 4.40 | 1.27 | 13.0 |
| 0.43 | 0.00 | 0.0 | 1.43 | 0.30 | 3.1 | 2.42 | 0.63 | 6.4 | 3.42 | 0.95 | 9.7 | 4.41 | 1.28 | 13.0 |
| 0.45 | 0.00 | 0.0 | 1.45 | 0.31 | 3.2 | 2.44 | 0.64 | 6.5 | 3.44 | 0.96 | 9.8 | 4.43 | 1.29 | 13.1 |
| 0.47 | 0.00 | 0.0 | 1.47 | 0.32 | 3.2 | 2.46 | 0.64 | 6.5 | 3.46 | 0.97 | 9.9 | 4.45 | 1.29 | 13.2 |
| 0.49 | 0.00 | 0.0 | 1.48 | 0.32 | 3.3 | 2.48 | 0.65 | 6.6 | 3.48 | 0.97 | 9.9 | 4.47 | 1.30 | 13.2 |
| 0.51 | 0.00 | 0.0 | 1.50 | 0.33 | 3.3 | 2.50 | 0.65 | 6.7 | 3.50 | 0.98 | 10.0 | 4.49 | 1.31 | 13.3 |
| 0.53 | 0.01 | 0.1 | 1.52 | 0.34 | 3.4 | 2.52 | 0.66 | 6.7 | 3.52 | 0.99 | 10.1 | 4.51 | 1.31 | 13.4 |
| 0.55 | 0.02 | 0.2 | 1.54 | 0.34 | 3.5 | 2.54 | 0.67 | 6.8 | 3.54 | 0.99 | 10.1 | 4.53 | 1.32 | 13.4 |
| 0.57 | 0.02 | 0.2 | 1.56 | 0.35 | 3.5 | 2.56 | 0.67 | 6.9 | 3.56 | 1.00 | 10.2 | 4.55 | 1.32 | 13.5 |
| 0.59 | 0.03 | 0.3 | 1.58 | 0.35 | 3.6 | 2.58 | 0.68 | 6.9 | 3.57 | 1.01 | 10.2 | 4.57 | 1.33 | 13.6 |
| 0.61 | 0.03 | 0.4 | 1.60 | 0.36 | 3.7 | 2.60 | 0.69 | 7.0 | 3.59 | 1.01 | 10.3 | 4.59 | 1.34 | 13.6 |
| 0.63 | 0.04 | 0.4 | 1.62 | 0.37 | 3.7 | 2.62 | 0.69 | 7.1 | 3.61 | 1.02 | 10.4 | 4.61 | 1.34 | 13.7 |
| 0.65 | 0.05 | 0.5 | 1.64 | 0.37 | 3.8 | 2.64 | 0.70 | 7.1 | 3.63 | 1.02 | 10.4 | 4.63 | 1.35 | 13.8 |
| 0.66 | 0.05 | 0.5 | 1.66 | 0.38 | 3.9 | 2.66 | 0.71 | 7.2 | 3.65 | 1.03 | 10.5 | 4.65 | 1.36 | 13.8 |
| 0.68 | 0.06 | 0.6 | 1.68 | 0.39 | 3.9 | 2.68 | 0.71 | 7.3 | 3.67 | 1.04 | 10.6 | 4.67 | 1.36 | 13.9 |
| 0.70 | 0.07 | 0.7 | 1.70 | 0.39 | 4.0 | 2.70 | 0.72 | 7.3 | 3.69 | 1.04 | 10.6 | 4.69 | 1.37 | 14.0 |
| 0.72 | 0.07 | 0.7 | 1.72 | 0.40 | 4.1 | 2.72 | 0.72 | 7.4 | 3.71 | 1.05 | 10.7 | 4.71 | 1.38 | 14.0 |
| 0.74 | 0.08 | 0.8 | 1.74 | 0.41 | 4.1 | 2.73 | 0.73 | 7.4 | 3.73 | 1.06 | 10.8 | 4.73 | 1.38 | 14.1 |
| 0.76 | 0.09 | 0.9 | 1.76 | 0.41 | 4.2 | 2.75 | 0.74 | 7.5 | 3.75 | 1.06 | 10.8 | 4.75 | 1.39 | 14.2 |
| 0.78 | 0.09 | 0.9 | 1.78 | 0.42 | 4.3 | 2.77 | 0.74 | 7.6 | 3.77 | 1.07 | 10.9 | 4.77 | 1.39 | 14.2 |
| 0.80 | 0.10 | 1.0 | 1.80 | 0.42 | 4.3 | 2.79 | 0.75 | 7.6 | 3.79 | 1.08 | 11.0 | 4.79 | 1.40 | 14.3 |
| 0.82 | 0.11 | 1.1 | 1.82 | 0.43 | 4.4 | 2.81 | 0.76 | 7.7 | 3.81 | 1.08 | 11.0 | 4.81 | 1.41 | 14.3 |
| 0.84 | 0.11 | 1.1 | 1.84 | 0.44 | 4.5 | 2.83 | 0.76 | 7.8 | 3.83 | 1.09 | 11.1 | 4.82 | 1.41 | 14.4 |
| 0.86 | 0.12 | 1.2 | 1.86 | 0.44 | 4.5 | 2.85 | 0.77 | 7.8 | 3.85 | 1.09 | 11.2 | 4.84 | 1.42 | 14.5 |
| 0.88 | 1.12 | 1.3 | 1.88 | 0.45 | 4.6 | 2.87 | 0.78 | 7.9 | 3.89 | 1.10 | 11.2 | 4.86 | 1.43 | 14.5 |
| 0.90 | 0.13 | 1.3 | 1.90 | 0.46 | 4.6 | 2.89 | 0.78 | 8.0 | 3.89 | 1.11 | 11.3 | 4.88 | 1.43 | 14.6 |
| 0.92 | 0.14 | 1.4 | 1.91 | 0.46 | 4.7 | 2.91 | 0.79 | 8.0 | 3.91 | 1.11 | 11.4 | 4.90 | 1.44 | 14.7 |
| 0.94 | 0.14 | 1.5 | 1.93 | 0.47 | 4.8 | 2.93 | 0.79 | 8.1 | 3.93 | 1.12 | 11.4 | 4.92 | 1.45 | 14.7 |
| 0.96 | 0.15 | 1.5 | 1.95 | 0.48 | 4.8 | 2.95 | 0.80 | 8.2 | 3.95 | 1.13 | 11.5 | 4.94 | 1.45 | 14.8 |
| 0.98 | 0.16 | 1.6 | 1.97 | 0.48 | 4.9 | 2.97 | 0.81 | 8.2 | 3.97 | 1.13 | 11.5 | 4.96 | 1.46 | 14.9 |
| | | | | | | | | | | | | 4.98 | 1.47 | 14.9 |

TOSHIBA