## SERVICE INSTRUCTION

<table>
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<th>Outdoor unit</th>
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<tbody>
<tr>
<td>ASU9RMLQ</td>
<td>AOU24RML</td>
<td></td>
</tr>
<tr>
<td>ASU12RMLQ</td>
<td>AOU36RML</td>
<td></td>
</tr>
<tr>
<td>ASU18RMLQ</td>
<td></td>
<td></td>
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<tr>
<td>ARU9RML</td>
<td>AOU24RML1</td>
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</tr>
<tr>
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<tr>
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<tr>
<td>AUU18RML</td>
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</tr>
</tbody>
</table>

**Refrigerant**

R410A

Fujitsu General Limited
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## 1. DESCRIPTION OF EACH CONTROL OPERATION

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WALL MOUNTED / DUCT / CASSETTE type INVERTER (MULTI)

1. DESCRIPTION OF EACH CONTROL OPERATION
1. CAPACITY CONTROL

1-1 COOLING, HEATING, DRY CAPACITY CONTROL

Compressor frequency decides by capacity of an indoor unit, operation number of an indoor unit, set temperature, room temperature and outside temperature.

2. AUTO CHANGE-OVER OPERATION

2-1 For AS, AU type

When the air conditioner is set to the AUTO mode by remote control, operation starts in the optimum mode from among the HEATING, COOLING, DRY and MONITORING modes. During operation, the optimum mode is automatically switched in accordance with temperature changes. The temperature can be set between 64°F(18°C) and 88°F(30°C) in 2°F(1°C) steps.

① When operation starts, only the indoor and outdoor fans are operated for 1 minute. After 1 minute, the room temperature and outside air temperature are sensed and the operation mode is selected in accordance with the table below.

( Fig.1 : Outside air temperature zone selection )

<table>
<thead>
<tr>
<th>C zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>90°F(32°C)</td>
</tr>
<tr>
<td>B zone</td>
</tr>
<tr>
<td>32°F(0°C)</td>
</tr>
<tr>
<td>A zone</td>
</tr>
</tbody>
</table>

( Table.1 Operation mode selection table )

<table>
<thead>
<tr>
<th>Outside air temperature (TO)</th>
<th>A zone</th>
<th>B zone</th>
<th>C zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room temperature (TB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TB &gt; TS+4°F(2°C)</td>
<td>Monitoring</td>
<td>Cooling (automatic dry)</td>
<td>Cooling (automatic dry)</td>
</tr>
<tr>
<td>TS+4°F(2°C) ≤ TB ≤ TS - 4°F(2°C)</td>
<td>Monitoring</td>
<td>Monitoring</td>
<td>Monitoring</td>
</tr>
<tr>
<td>TB &lt; TS - 4°F(2°C)</td>
<td>Heating</td>
<td>Heating</td>
<td>Monitoring</td>
</tr>
</tbody>
</table>

① When COOLING was selected at ①, the air conditioner operates as follow:
- The same operation as COOLING OPERATION of item 1 above is performed.
- When the room temperature has remained at (set temperature -2°F(1°C)) for 8 minutes, operation is automatically switched to DRY and the same operation as DRY OPERATION of item 3 above is performed.
- If the room temperature reaches (set temperature +4°F(2°C) during DRY operation, operation returns to COOLING operation.

② When HEATING was selected at ①, the same operation as HEATING OPERATION of item 2 above is performed.

③ When the compressor was stopped for 6 consecutive minutes by the temperature control function after the COOLING or HEATING operation mode was selected at ① above, operation is switched to MONITORING and the operation mode is selected again.
When the air conditioner is set to the AUTO mode by remote control, operation starts in the optimum mode from among the HEATING, COOLING and MONITORING modes. During operation, the optimum mode is automatically switched in accordance with temperature changes. The temperature can be set between 18°C and 30°C in 1 degC steps.

1. When operation starts, only the indoor fan is operated for 1 minute. (Air flow mode: S-Lo)
   After 1 minute, depends on the room temperature and outdoor unit's operational mode, the operation mode is selected in accordance with the table below.

( Table 1 : Operation mode selection table )

<table>
<thead>
<tr>
<th>Room temperature : TR</th>
<th>Operation mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR ≥ Ts +2 degC</td>
<td>Cooling</td>
</tr>
<tr>
<td>Ts +2 degC &gt; TR &gt; Ts-2 degC</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Ts +2 degC ≥ TR</td>
<td>Heating</td>
</tr>
</tbody>
</table>

Ts : Setting temperature
TR: Room temperature

2. When COOLING was selected at 1, the same operation as COOLING OPERATION is performed.
3. When HEATING was selected at 1, the same operation as HEATING OPERATION is performed.
4. When the compressor was stopped for 6 consecutive minutes by the temperature control function after the COOLING or HEATING operation mode was selected at 1 above, operation is switched to MONITORING and the operation mode is selected again.

For AR type
## 3. INDOOR FAN CONTROL

### (1) Fan speed

( Table 2 : Indoor Fan Speed )

<table>
<thead>
<tr>
<th>ASU9RMLQ</th>
<th>Operation mode</th>
<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>Hi</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me+</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>970</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Hi</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>800</td>
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</table>

<table>
<thead>
<tr>
<th>ASU12RMLQ</th>
<th>Operation mode</th>
<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>Hi</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me+</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,230</td>
<td></td>
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<tr>
<td></td>
<td>Lo</td>
<td>1,110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>960</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Hi</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,230</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>1,050</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
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<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>900</td>
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</table>

<table>
<thead>
<tr>
<th>ASU18RMLQ</th>
<th>Operation mode</th>
<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>Hi</td>
<td>1,480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me+</td>
<td>1,480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>1,060</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Hi</td>
<td>1,480</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>1,380</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>1,060</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
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<td>1,060</td>
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<thead>
<tr>
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<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
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<tr>
<td>Heating</td>
<td>Hi</td>
<td>1,070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>880</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>Hi</td>
<td>1,070</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>880</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>450</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>800</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARU12RML</th>
<th>Operation mode</th>
<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>Hi</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>790</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>310</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>310</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>700</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ARU18RML</th>
<th>Operation mode</th>
<th>Air flow mode</th>
<th>Speed (rpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>Hi</td>
<td>1,010</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Me</td>
<td>850</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lo</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Quiet</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cool air</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td></td>
<td>prevention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>S-Lo</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>Dry</td>
<td></td>
<td>800</td>
<td></td>
</tr>
</tbody>
</table>
(2). FAN OPERATION

The airflow can be switched in 5 steps such as AUTO, QUIET, LOW, MED, HIGH, while the indoor fan only runs.

When Fan mode is set at (Auto), it operates on (MED) Fan Speed. < for AS, AU type > it operates intermittent on (LO) Fan speed and (OFF) by one minute. <for AR type>

(3). COOLING OPERATION

Switch the airflow [AUTO], and the indoor fan motor will run according to a room temperature, as shown in Figure 2.

On the other hand, if switched in [HIGH]~[QUIET], the indoor motor will run at a constant airflow of [COOL] operation modes QUIET, LOW, MED, HIGH, as shown in Table 2.

![Diagram](image-url)

*1 : Contains a condition to the following

① When the operation mode is set to AUTO mode at the start of operation.
② When the setting temperature was changed.
③ When the operation mode was changed to COOLING mode.
④ When the airflow mode was changed to AUTO mode.
(4). DRY OPERATION
During the dry mode operation, the fan speed setting can not be changed.
The indication of the remote controller is fixed in [AUTO].
The fan operates on [S-Lo] mode or OFF.

(5). HEATING OPERATION
5-1. For AU / AS Type
Switch the airflow [AUTO], and the indoor fan motor will run according to a room temperature, as shown in Figure 3.
On the other hand, if switched [HIGH] ~ [QUIET], the indoor motor will run at a constant airflow of [HEAT] operation modes QUIET, LOW, MED, HIGH, as shown in Table 2.

(Fig.3) airflow change - over ( Heating: AUTO )
When the room temperature rises
-2°F(-1°C) LOW mode
-4°F(-2°C) MED mode
-5°F(-2.5°C) MED + mode
(Room temperature) - (Setting temperature)

5-2. For AR Type
When the airflow is set to [AUTO], the indoor fan motor operates [MED] mode.
Then the indoor fan motor will run according to a room temperature, as shown in Figure 4.
On the other hand, if switched in [HIGH] ~ [QUIET], the indoor motor will run at a constant airflow of [HEAT] operation modes QUIET, LOW, MED, HIGH, as shown in Table 2.

(Fig.4) Airflow change - over ( Heating : AUTO )
Indoor heat exchanger temperature
117°F(47°C) Go up one-step
105.8°F(41°C) Hold
104°F(40°C) Go down one-step

(6). COOL AIR PREVENTION CONTROL (Heating mode)
6-1. For AS Type
The maximum value of the indoor fan speed is set as shown in Figure 5, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

(Fig.5) Cool Air Prevention Control
Indoor heat exchanger temperature
117°F(47°C) Hi
104°F(40°C) Me+
99°F(37°C) Lo
86°F(30°C) S-Lo
Cool air prevention
Indoor heat exchanger temperature
104°F(40°C) 103°F(34°C) 90°F(32°C) 82°F(28°C)
6-2. For AR Type
The maximum value of the indoor fan speed is set as shown in Figure 6, based on the detected temperature by the indoor heat exchanger sensor on heating mode.

(Fig.6: Cool Air Prevention Control)

6-3. For AU Type
When the compressor operates, the maximum value of the indoor fan speed is set as shown in Figure 7, based on the detected temperature by the indoor heat exchanger sensor on heating mode. When the compressor does not operate, the indoor fan motor operates [S-Lo] mode.

(Fig.7: Cool Air Prevention Control)
4. OUTDOOR FAN CONTROL

(1). Fan Speed

The speed of outdoor unit fan motor is determined at outside temperature and compressor rotation.

( Table 2 : Target fan speed )

<table>
<thead>
<tr>
<th>Outdoor temperature</th>
<th>Fan rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling</td>
<td></td>
</tr>
<tr>
<td>Tout≥45</td>
<td>HI</td>
</tr>
<tr>
<td>45&gt;Tout≥38</td>
<td>HI</td>
</tr>
<tr>
<td>38&gt;Tout≥31</td>
<td>HI</td>
</tr>
<tr>
<td>31&gt;Tout≥26</td>
<td>MED</td>
</tr>
<tr>
<td>26&gt;Tout≥22</td>
<td>LOW</td>
</tr>
<tr>
<td>22&gt;Tout≥18</td>
<td>LOW</td>
</tr>
<tr>
<td>18&gt;Tout≥12</td>
<td>S-LOW</td>
</tr>
<tr>
<td>12&gt;Tout≥7</td>
<td>S-LOW</td>
</tr>
<tr>
<td>7&gt;Tout≥3</td>
<td>S-LOW</td>
</tr>
<tr>
<td>3&gt;Tout</td>
<td>S-LOW</td>
</tr>
<tr>
<td>Heating</td>
<td></td>
</tr>
<tr>
<td>Tout≥24</td>
<td>S-LOW</td>
</tr>
<tr>
<td>24&gt;Tout≥20</td>
<td>S-LOW</td>
</tr>
<tr>
<td>20&gt;Tout≥16</td>
<td>LOW</td>
</tr>
<tr>
<td>16&gt;Tout≥12</td>
<td>MED</td>
</tr>
<tr>
<td>12&gt;Tout≥5</td>
<td>HI</td>
</tr>
<tr>
<td>5&gt;Tout≥1</td>
<td>H-HI</td>
</tr>
<tr>
<td>-1&gt;Tout≥-6</td>
<td>H-HI</td>
</tr>
<tr>
<td>-6&gt;Tout≥-11</td>
<td>H-HI</td>
</tr>
<tr>
<td>-11&gt;Tout</td>
<td>H-HI</td>
</tr>
</tbody>
</table>

( Table 4 : Outdoor fan speed )

<table>
<thead>
<tr>
<th>Speed Mode</th>
<th>H-HI</th>
<th>S-HI</th>
<th>HI</th>
<th>MED</th>
<th>LOW</th>
<th>S-LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOU24/36RML</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Fan</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td>Lower Fan</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>780</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td>AOU24/36RML</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Fan</td>
<td>850</td>
<td>900</td>
<td>900</td>
<td>900</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td>Lower Fan</td>
<td>850</td>
<td>900</td>
<td>900</td>
<td>900</td>
<td>400</td>
<td>300</td>
</tr>
</tbody>
</table>
5. LOUVER CONTROL

5-1 Wall Mounted (AS) type

(1). VERTICAL LOUVER CONTROL

(Function Range)
Each time the button is pressed, the air direction range will change as follow:

(1) → (2) → (3) → (4) → (5) → (6) → (7)

(Fig 5: Air Direction Range)

(Operation Range)
- Cooling / Dry mode: 1 → 2 → 3
- Heating mode: 4 → 5 → 6 → 7
- Fan mode: 1 → 2 → 3 → 4 → 5 → 6 → 7

Use the air direction adjustments within the ranges shown above.

- The vertical airflow direction is set automatically as shown, in accordance with the type of operation selected.
  - Cooling / Dry mode: Horizontal flow 1
  - Heating mode: Downward flow 7
- When the temperature of the air being blown out is low at the start of heating operation or during defrosting, the airflow direction temporarily becomes 7 to prevent cold air being blown onto the body.
- During use of the Cooling and Dry modes, do not set the Air Flow Direction Louver in the Heating range (4~7) for long period of time, since water vapor may condense near the outlet louvers and drop of water may drip from the air conditioner. During the Cooling and Dry modes, if the Air Flow Direction Louvers are left in the hating range for more than 30 minutes, they will automatically return to position 1.
- During Monitor operation in AUTO CHANGEOVER mode, the airflow direction automatically becomes 1, and it cannot be adjusted.

(2). SWING OPERATION

When the swing signal is received from the remote controller, the vertical louver starts to swing.

(Swinging Range)
- Cooling mode / Dry mode / Fan mode(1~3): 1 ↔ 3
- Heating mode / Fan mode(4~7): 3 ↔ 7

- When the indoor fan is either at S-lo or Stop mode, the swinging operation is interrupted and the louver stops at the memorized position.
1. VERTICAL LOUVER CONTROL

(Function Range)
Each time the button is pressed, the air direction range will change as follows:

① — ② — ③ — ④

(Air Direction Range)

(Operation Range)
During Cooling/Dry mode/Fan mode: ① — ② — ③ — ④
During Heating mode: ① — ② — ③ — ④

Use the air direction adjustments within the ranges shown above.

• The vertical airflow direction is set automatically as shown, in accordance with the type of operation selected.
  - Cooling / Dry / Fan mode: Horizontal flow ①
  - Heating mode: Downward flow ④

• During AUTO mode operation, for the first minute after beginning operation, air-flow will be horizontal ①; the air direction cannot be adjusted during this period.

1-2. SWING OPERATION

When the swing signal is received from the remote controller, the vertical louver starts to swing. The range of swing depends on the set airflow direction.

(Swinging Range)

<table>
<thead>
<tr>
<th>The type of operation</th>
<th>Range of swing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling/Dry/Fan</td>
<td>① to ④</td>
</tr>
<tr>
<td>Heating</td>
<td>① to ④</td>
</tr>
</tbody>
</table>

• When the indoor fan is either at S-Lo or Stop mode, the swinging operation is interrupted and the louver stops at the memorized position.
  (Stop mode means Operation stop.)
6. COMPRESSOR CONTROL

(1). OPERATION FREQUENCY RANGE
The operation frequency of the compressor is different based on the operation mode as shown in the table 4.

(Table 4 : Compressor Operation Frequency Range)

<table>
<thead>
<tr>
<th></th>
<th>Cooling</th>
<th>Heating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min</td>
<td>Max</td>
</tr>
<tr>
<td>AOU24RML</td>
<td>15Hz</td>
<td>90Hz</td>
</tr>
<tr>
<td>AOU36RML</td>
<td>15Hz</td>
<td>90Hz</td>
</tr>
</tbody>
</table>

(2). OPERATION FREQUENCY CONTROL AT START UP
The compressor frequency soon after the start-up is controlled as shown in the figure 6.

(Fig.6 : Compressor Control at Start-up)

1) Compressor operates for 180 seconds by 40 rotations.
2) In the case of lower than 40 rotations, it operates at these rotations.
3) Compressor operates for 60 to 720 seconds.
   When discharge temperature exceeds 30 degrees in the meantime, it shifts to 56 rotations.
4) Compressor operates at target rotations after 120 second operation.
7. TIMER OPERATION CONTROL

7-1 Wireless Remote Controller

For AS type

- ON / OFF TIMER
- PROGRAM TIMER
- SLEEP TIMER

(1). OPERATION FREQUENCY RANGE

- OFF timer: When the clock reaches the set time, the air conditioner will be turned off.

- ON timer: When the clock reaches the set time, the air conditioner will be turned on.

(2). PROGRAM TIMER

- The program timer allows the OFF timer and ON timer to be used in combination one time.

- Operation will start from the timer setting (either OFF timer or ON timer) whichever is closest to the clock’s current timer setting. The order of operations is indicated by the arrow in the remote control unit’s display.
- SLEEP timer operation cannot be combined with ON timer operation.
(3). SLEEP TIMER

If the sleep is set, the room temperature is monitored and the operation is stopped automatically. If the operation mode or the set temperature is change after the sleep timer is set, the operation is continued according to the changed setting of the sleep timer from that time ON.

**In the cooling operation mode**

When the sleep timer is set, the setting temperature is increased 2°F(1°C). It increases the setting temperature another 2°F(1°C) after 1 hour. After that, the setting temperature is not changed and the operation is stopped at the time of timer setting.

![Diagram](attachment:cooling-operation-mode.png)

**In the heating operation mode**

When the sleep timer is set, the setting temperature is decreased 2°F(1°C). It decreases the setting temperature another 2°F(1°C) every 30 minutes. Upon lowering 8°F(4°C), the setting temperature is not changed and the operation stops at the time of timer setting.

![Diagram](attachment:heating-operation-mode.png)
7-2 Wired Remote Controller

For AR / AU type

• ON / OFF TIMER
• WEEKLY TIMER
• TEMPERATURE SET BACK TIMER

1. ON / OFF TIMER

• OFF timer : When the clock reaches the set time, the air conditioner will be turned off.

   ![OFF timer diagram]

• ON timer : When the clock reaches the set time, the air conditioner will be turned on.

   ![ON timer diagram]

2. WEEKLY TIMER

2-1. WEEKLY TIMER

• Use this timer function to set operating time for each day of the week.
• The weekly timer allows up to two ON and OFF time to set up per day.

   ![Weekly timer diagram]

• The operating time can be set in 30 min increments only.
• The OFF time can be carried over to next day.
• The ON timer and the OFF timer functions cannot be set with using the weekly timer. Both ON and OFF time must be set.
2-2. DAY OFF setting
  - The DAY OFF setting is only available for days for which weekly settings already exist.
  - If the operating time carries over to the next day (during a next day setting), the effective
    DAY OFF range will be set as shown below.

  - Normal

    ![](image)

  - Next day setting

    ![](image)

  - The DAY OFF setting can only be set one time. The DAY OFF setting is cancelled automatically
    after the set day has passed.

3. TEMPERATURE SET BACK TIMER
  - The SET BACK timer only changes the set temperature for 7 days, it cannot be used to start or stop
    air conditioner operation.
  - The SET BACK timer can be set to operate up to two times per day but only one temperature setting
    can be used.
  - During the COOL/DRY mode, the air conditioner will operate at a minimum of 18°C even if
    the SET BACK temperature is set to 17°C or lower.

Case of SET BACK timer on the Cooling operation.
( Setting temperature :22°C, SET BACK temperature :26°C)

<table>
<thead>
<tr>
<th>SET BACK setting</th>
<th>Operation temperature</th>
<th>ON</th>
<th>OFF</th>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*1</td>
<td>26°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24°C 22°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1: During the SET BACK function, the setting temperature is changed.

Change the setting temperature: 22°C → 24°C
8. ELECTRONIC EXPANSION VALVE CONTROL

The most proper opening of the electronic expansion valve is calculated and controlled under the present operating condition based on the following values. The compressor frequency, the temperatures detected by the discharge temperature sensor and the outdoor temperature sensor.

- The pulse range of the electronic expansion valve control is between 30 to 480 pulses.
- At the time of supplying the power to the outdoor unit, the initialization of the electronic expansion valve is operated (1000 pulses are input to the closing direction).

9. TEST OPERATION CONTROL

Under the condition where the air conditioner runs, press the test operation button of the remote control, and the test operation control mode will appear. During test running, the operation lamp and timer lamp of the air conditioner body twinkle simultaneously. Set the test operation mode, and the compressor will continue to run regardless of whether the room temperature sensor detects. The compressor won’t enter operation status for 3 minutes after the compressor is stopped, even if any operation is given.

When the power was interrupted by a power failure, etc. during operation, the operation contents at that time are memorized and when power is recovered, operation is automatically started with the memorized operation contents. When the power is interrupted and recovered during timer operation, since the timer operation time is shifted by the time the power was interrupted, an alarm is given by blinking (7 sec ON/2 sec OFF) the indoor unit body timer lamp.

10. PREVENT TO RESTART FOR 3 MINUTES (3 MINUTES ST)

The compressor won’t enter operation status for 3 minutes after the compressor is stopped, even if any operation is given.

11. FOUR-WAY VALVE EXTENSION SELECT

At the time when the air conditioner is switched from the cooling mode to heating mode, the compressor is stopped, and the 4-way valve is switched in 3 minutes later after the compressor stopped.

12. AUTO RESTART

When the power was interrupted by a power failure, etc. during operation, the operation contents at that time are memorized and when power is recovered, operation is automatically started with the memorized operation contents.

When the power is interrupted and recovered during timer operation, since the timer operation time is shifted by the time the power was interrupted, an alarm is given by blinking (7 sec ON/2 sec OFF) the indoor unit body timer lamp.

[Operation contents memorized when the power is interrupted]
- Operation mode
- Set temperature
- Set air flow
- Timer mode and timer time
- Set air flow Direction
- Swing
- The detection position of the thermistor (When it used the wired remote controller for AS and AU)
13. MANUAL AUTO OPERATION (Indoor unit body operation)

If MANUAL AUTO Button is set, the operation is controlled as shown in Table 6. If the remote control is lost or battery power dissipated, this function will work without the remote control.

(Table 6)

<table>
<thead>
<tr>
<th>Manual auto operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATION MODE</td>
</tr>
<tr>
<td>FAN CONT. MODE</td>
</tr>
<tr>
<td>TIMER MODE</td>
</tr>
<tr>
<td>SETTING TEMP.</td>
</tr>
<tr>
<td>SETTING LOUVER</td>
</tr>
<tr>
<td>SWING</td>
</tr>
</tbody>
</table>

14. FORCED COOLING OPERATION

Forced cooling operation is started when pressing MANUAL AUTO button for 10 seconds or more. During the forced cooling operation, it operates regardless of room temperature sensor. Operation LED and timer LED blink during the forced cooling operation. They blink for 1 second ON and 1 second OFF on both operation LED and timer LED (same as test operation). Forced cooling operation is released after 60 minutes of starting operation. The FORCED COOLING OPERATION will start as shown in Table 7.

(Table 7)

<table>
<thead>
<tr>
<th>Forced cooling operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPERATION MODE</td>
</tr>
<tr>
<td>FAN CONT. MODE</td>
</tr>
<tr>
<td>TIMER MODE</td>
</tr>
<tr>
<td>SETTING TEMP.</td>
</tr>
<tr>
<td>SETTING LOUVER</td>
</tr>
<tr>
<td>SWING</td>
</tr>
</tbody>
</table>

15. COMPRESSOR PREHEATING

When the outdoor heat exchanger temperature is lower than Operation temperature (Refer to Table 8) and the heating operation has been stopped for 3 hours, power is applied to the compressor and the compressor is heated. (By heating the compressor, warm air is quickly discharged when operation is started.) When operation was started, and when the outdoor temperature rises to Release temperature or greater, preheating is over.

(Table 8 : Preheating Operation / Release Temperature)

<table>
<thead>
<tr>
<th></th>
<th>Before 24 hour</th>
<th>After 24 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operation</td>
<td>Release</td>
</tr>
<tr>
<td></td>
<td>temperature</td>
<td>temperature</td>
</tr>
<tr>
<td>AOU24RML</td>
<td>37.4°F (3°C)</td>
<td>44.6°F (7°C)</td>
</tr>
<tr>
<td>AOU36RML</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
16. FRESH AIR CONTROL (For AR type)

The fan motor for Fresh Air is operated in synchronization with the indoor fan operation as shown in Figure 11.

(Fig.11 : Fresh air control)

17. EXTERNAL ELECTRICAL HEATER CONTROL (For AR type)

The external electrical heater is operated as shown in Figure 12.

(Fig.12 : External electrical heater control)

18. DRAIN PUMP OPERATION (For AU, *AR type)

- During Cooling / Dry operation
  1. When the compressor starts, the drain pump starts simultaneously.
  2. The drain pump operates continuously for 3 minutes after the compressor is turned off.
  3. When the compressor stops by the "indoor heat exchanger de-icing function", the drain pump is turned off in 1 hour after the compressor stops.
  4. When the water level in the drain pan rises up and then the float switch functions:
     ① The compressor, indoor and outdoor fan motor operation are stopped.
     ② Drain pump operates continuously for 3 minutes after the float switch is turned off.
     (Almost condensing water may be drained)
  5. When the float switch turns ON continuously for 3 min., "FAILURE INDICATION" operates.
  6. When the float switch turns OFF within 3 min., the unit starts cooling operation.

- During Heating / Fan / Stop operation
  1. When the water level in the drain pan rises up and then the float switch functions:
     ① Drain pump operates continuously for 3 minutes after the float switch is turned off.
     (Almost condensing water may be drained)
  2. When the float switch turns ON continuously for 3 min., "FAILURE INDICATION" operates.

* When installed the drain pump which procured locally, it operates
19. COIL DRY AND CLEAN OPERATION CONTROL (For AS type)

The coil-dry and clean operation functions by pressing COIL DRY button on the remote controller. The coil-dry operation is consisted of 3 cycles of [Fan operation 3 minutes / Heating operation 2 minutes], and Fan operates for 3 minutes at last before ending the air conditioner operation. (It takes 18 minutes to complete the coil-dry operation.) It continues from coil-dry operation, it turns on electricity to Air clean unit, sterilization is performed for 15 minutes. Indoor unit fan motor operation under coil-clean operation: The cycle of 480rpm Fixation 5 sec ON / 1 min OFF is repeated. (It takes 33 minutes to complete the air cleaning operation.)

(Table 9: COIL-DRY AND CLEAN Operating Functions)

<table>
<thead>
<tr>
<th></th>
<th>Indoor Fan Speed</th>
<th>Louver Position</th>
<th>Main Unit Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASU9RMLQ</td>
<td>900rpm</td>
<td>480rpm</td>
<td>Operating COIL DRY : ON</td>
</tr>
<tr>
<td>ASU12RMLQ</td>
<td>900rpm</td>
<td>480rpm</td>
<td>Other indication : OFF</td>
</tr>
<tr>
<td>ASU18RMLQ</td>
<td>900rpm</td>
<td>480rpm</td>
<td></td>
</tr>
</tbody>
</table>

※ MW09/ 12/ 18Y3FM model (For Friedrich) is only COIL-DRY OPERATION.

20. AIR CLEAN OPERATION (Only for ASU9/ 12/18RMLQ)

The air clean operation switches ON and OFF as follows every time it receives AIR CLEAN signal from remote controller.

<table>
<thead>
<tr>
<th>Status before receiving Air Clean signal</th>
<th>Status upon receiving Air Clean signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation stops</td>
<td>Operation keeps stopping</td>
</tr>
<tr>
<td>In operation (Air Clean operation is OFF.)</td>
<td>It continues to operate (Air Clean operation becomes ON.)</td>
</tr>
<tr>
<td>In operation (Air Clean operation is ON.)</td>
<td>It continues to operate (Air Clean operation becomes OFF.)</td>
</tr>
</tbody>
</table>

・When Air Clean operation is ON, Indoor fan speed becomes at [S-Lo](480rpm), and not at 0rpm even if the indoor fan is in stop condition.

・Air Clean operation becomes OFF during the defrost operation.
21. ENERGY SAVE FUNCTION (For AR type)

1. During Cooling / Dry operation:
The thermostat temperature setting increases by 1 degC as soon as the ENERGY SAVE button is pressed, and then increases by 1 degC after 1 hour later. Afterwards, energy consumption is saved by continuing to cool or dry at a thermostat temperature of 2 degC higher than setting temperature.

2. During Heating operation:
The thermostat temperature setting decreases by 1 degC as soon as the ENERGY SAVE button is pressed, and then decreases by another 1 degC every 30 minutes. Afterwards, energy consumption is saved by continuing to heat at a thermostat temperature of 4 degC lower than setting temperature.

22. DEFROST OPERATION CONTROL

1. CONDITION OF STARTING THE DEFROST OPERATION
The defrost operation starts when the outdoor heat exchanger temperature sensor detects the temperature lower than the values shown in Table 9.

(Table 9 : Condition of starting Defrost Operation)

<table>
<thead>
<tr>
<th>Compressor integrating operation</th>
<th>Compressor integrating operation: 45min and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 6 min. *1</td>
<td>After 6 min. *1</td>
</tr>
<tr>
<td>or 10min. *2</td>
<td>or 10min. *2</td>
</tr>
<tr>
<td>AOU24RML AOU36RML</td>
<td>Does not operate</td>
</tr>
</tbody>
</table>

*1. It means contiguous operation time. *3. Outdoor temp. ≥ 30.2°F (-1°C)
*2. Compressor stop time: Below 20min. Select 6min. *4. Outdoor temp. < 30.2°F (-1°C)

Above 20min. Select 10min.

2. CONDITION OF THE DEFROST OPERATION COMPLETION
Defrost operation is released when the conditions become as shown in Table 10.

(Table 10 : Defrost Release Condition)

<table>
<thead>
<tr>
<th>Release Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOU24RML AOU36RML</td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature sensor value is higher than 53.6°F(12°C) or Compressor operation time has passed 15 minutes.</td>
</tr>
</tbody>
</table>
Defrost Flow Chart

The defrosting shall proceed by the integrating operation time and outdoor heat exchanger temperature as follows.

1. Heating operation start: Compressor ON
   - (Not defrosted for 6 or 10 minutes)
   - Compressor integrating operation: 45 minutes and over
   - Outdoor temp. ≥ 30.2°F (-1°C)
   - Outdoor heat exchanger temperature: Below 17.6°F (-8°C)
   - Outdoor temp. < 30.2°F (-1°C)
   - Outdoor heat exchanger temperature: Below 14°F (-10°C)

2. Defrost start
   - Defrost Indicator: [Operation lamp]
     - 7 sec ON / 1 sec OFF
     - ① Outdoor fan motor OFF
     - ② 4-way valve OFF
     - ③ Compressor ON
     - ④ (Frequency: 92 Hz)

3. Outdoor heat exchanger temperature: Over 53.6°F (12°C)
   - or
   - Compressor ON time: Over 15 minutes

4. Defrost end
(1). DISCHARGE GAS TEMPERATURE OVERRISE PREVENSION CONTROL

The discharge gas thermosensor (discharge thermistor : Outdoor side) will detect discharge gas temperature.

When the discharge temperature becomes higher than Temperature I, the compressor frequency is decreased 20 Hz, and it continues to decrease the frequency for 20 Hz every 120 seconds until the temperature becomes lower than Temperature I.

When the discharge temperature becomes lower than Temperature II, the control of the compressor frequency is released.

When the discharge temperature becomes higher than Temperature III, the compressor is stopped and the indoor unit LED starts blinking.

<table>
<thead>
<tr>
<th>Temperature</th>
<th>Temperature I</th>
<th>Temperature II</th>
<th>Temperature III</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOU24/36RML</td>
<td>230°F (110°C)</td>
<td>212°F (100°C)</td>
<td>239°F (115°C)</td>
</tr>
</tbody>
</table>

(2). CURRENT RELEASE CONTROL

The compressor frequency is controlled so that the outdoor unit input current does not exceed the current limit value that was set up with the outdoor temperature. The compressor frequency returns to the designated frequency of the indoor unit at the time when the frequency becomes lower than the release value.

(3). ANTI-FREEZING CONTROL (Cooling mode)

The compressor frequency decreases on cooling mode when the indoor heat exchanger temperature sensor detects the temperature lower than 37.4°F (3°C).

Then, the anti-freezing control is released when it becomes higher than 42.8°F (6°C).

(Fig 7 : Anti-freezing Protection Operation / Release Temperature)

<table>
<thead>
<tr>
<th>Indoor heat exchange temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>37.4°F (3°C)</td>
</tr>
<tr>
<td>42.8°F (6°C)</td>
</tr>
<tr>
<td>46.4°F (8°C)</td>
</tr>
<tr>
<td>The compressor frequency is</td>
</tr>
<tr>
<td>decreased 10Hz every 120 seconds.</td>
</tr>
<tr>
<td>Hold</td>
</tr>
<tr>
<td>Compressor OFF : Hold</td>
</tr>
<tr>
<td>Compressor ON : Release of protection</td>
</tr>
<tr>
<td>Release of protection</td>
</tr>
</tbody>
</table>

(4). COOLING PRESSURE OVER RISE PROTECTION

When the outdoor unit heat exchange sensor temperature rises to 158.9°F (70.5°C) or greater, the compressor is stopped and error display is indicated.
(5). HIGH TEMPERATURE RELEASE CONTROL (HEATING MODE)

On heating mode, the compressor frequency is controlled as following based on the detection value of the indoor heat exchanger temperature sensor.

(Fig 8: Heating Overload Protection Control)

<table>
<thead>
<tr>
<th>Indoor heat exchange temperature</th>
<th>Compressor is OFF</th>
<th>Hold</th>
<th>Compressor OFF: Release of protection</th>
<th>Compressor ON: The compressor frequency is increased 10Hz every 60 seconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>145.4°F (63°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132.8°F (56°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>125.6°F (52°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WALL MOUNTED / DUCT CASSETTE type INVERTER (MULTI)

2. TROUBLE SHOOTING
## 2. TROUBLESHOOTING

### 2-1 ERROR DISPLAY

### 2-1-1 INDOOR UNIT DISPLAY

For ASU9 - 18RMLQ
The OPERATION, TIMER, AIR CLEAN and COIL DRY lamps operate as follows according to the error contents.

<table>
<thead>
<tr>
<th>Error contents</th>
<th>Error display</th>
<th>Trouble shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication error (Serial reverse transfer error)</td>
<td>— 2 times</td>
<td>2</td>
</tr>
<tr>
<td>Outdoor communication signal error (Forward transfer signal error)</td>
<td>— 4 times</td>
<td>11</td>
</tr>
<tr>
<td>Communication error (indoor unit — remote control)</td>
<td>— 8 times</td>
<td>1</td>
</tr>
<tr>
<td>Room temperature thermistor error</td>
<td>2 times</td>
<td>3</td>
</tr>
<tr>
<td>Indoor heat exchanger temperature thermistor (middle) error</td>
<td>2 times</td>
<td>4</td>
</tr>
<tr>
<td>Outdoor discharge pipe temperature thermistor error</td>
<td>3 times</td>
<td>8</td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature thermistor error</td>
<td>3 times</td>
<td>5</td>
</tr>
<tr>
<td>Outdoor temperature thermistor error</td>
<td>3 times</td>
<td>7</td>
</tr>
<tr>
<td>Heat sink temperature thermistor error</td>
<td>3 times</td>
<td>19</td>
</tr>
<tr>
<td>Compressor temperature thermistor error</td>
<td>3 times</td>
<td>12</td>
</tr>
<tr>
<td>2-way valve temperature thermistor error</td>
<td>3 times</td>
<td>21</td>
</tr>
<tr>
<td>3-way valve temperature thermistor error</td>
<td>3 times</td>
<td>22</td>
</tr>
<tr>
<td>Manual auto switch error</td>
<td>4 times</td>
<td>25</td>
</tr>
<tr>
<td>Power supply frequency detection error</td>
<td>4 times</td>
<td>26</td>
</tr>
<tr>
<td>VDD permanence stop protection (Electric air clean)</td>
<td>4 times</td>
<td>29</td>
</tr>
<tr>
<td>Reverse-VDD permanence stop protection (Electric air clean power supply circuit abnormal)</td>
<td>4 times</td>
<td>30</td>
</tr>
<tr>
<td>IPM error</td>
<td>5 times</td>
<td>14</td>
</tr>
<tr>
<td>CT error</td>
<td>5 times</td>
<td>15</td>
</tr>
<tr>
<td>Compressor rotor location cannot detect (permanent stop)</td>
<td>5 times</td>
<td>17</td>
</tr>
<tr>
<td>Outdoor unit fan motor error</td>
<td>5 times</td>
<td>18</td>
</tr>
<tr>
<td>Connected indoor unit error</td>
<td>5 times</td>
<td>23</td>
</tr>
<tr>
<td>Main CPU-Sub CPU communication error</td>
<td>5 times</td>
<td>24</td>
</tr>
<tr>
<td>Indoor fan motor abnormal</td>
<td>6 times</td>
<td>10</td>
</tr>
<tr>
<td>Discharge temperature error</td>
<td>7 times</td>
<td>31</td>
</tr>
<tr>
<td>Excessive high pressure protection on cooling</td>
<td>7 times</td>
<td>32</td>
</tr>
<tr>
<td>Pressure switch error</td>
<td>7 times</td>
<td>13</td>
</tr>
<tr>
<td>Active filter module (AFM) error</td>
<td>8 times</td>
<td>16</td>
</tr>
<tr>
<td>Indoor EEPROM abnormal (Model No.)</td>
<td>Continuous blink</td>
<td>9</td>
</tr>
</tbody>
</table>

○ : 0.5s ON / 0.5s OFF (Flash) — : OFF
The OPERATION, TIMER and FILTER lamps operate as follows according to the error contents.

<table>
<thead>
<tr>
<th>Error contents</th>
<th>Error display</th>
<th>Trouble shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OPERATION (GREEN)</td>
<td>TIMER (ORANGE)</td>
</tr>
<tr>
<td>Communication error (Serial reverse transfer error)</td>
<td>—</td>
<td>2 times</td>
</tr>
<tr>
<td>Outdoor communication signal error (Forward transfer signal error)</td>
<td>—</td>
<td>4 times</td>
</tr>
<tr>
<td>Communication error (Main PCB ← Display PCB)</td>
<td>—</td>
<td>6 times</td>
</tr>
<tr>
<td>Communication error (Main PCB ← Display PCB)</td>
<td>—</td>
<td>7 times</td>
</tr>
<tr>
<td>Communication error (indoor unit ← remote control)</td>
<td>—</td>
<td>8 times</td>
</tr>
<tr>
<td>Room temperature thermistor error</td>
<td>2 times</td>
<td>2 times</td>
</tr>
<tr>
<td>Indoor heat exchanger temperature thermistor (middle) error</td>
<td>2 times</td>
<td>3 times</td>
</tr>
<tr>
<td>Water drain abnormal</td>
<td>2 times</td>
<td>6 times</td>
</tr>
<tr>
<td>Outdoor discharge pipe temperature thermistor error</td>
<td>3 times</td>
<td>2 times</td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature thermistor error</td>
<td>3 times</td>
<td>3 times</td>
</tr>
<tr>
<td>Outdoor temperature thermistor error</td>
<td>3 times</td>
<td>4 times</td>
</tr>
<tr>
<td>Heat sink temperature thermistor error</td>
<td>3 times</td>
<td>7 times</td>
</tr>
<tr>
<td>Compressor temperature thermistor error</td>
<td>3 times</td>
<td>8 times</td>
</tr>
<tr>
<td>2-way valve temperature thermistor error</td>
<td>3 times</td>
<td>—</td>
</tr>
<tr>
<td>3-way valve temperature thermistor error</td>
<td>3 times</td>
<td>—</td>
</tr>
<tr>
<td>Manual auto switch error</td>
<td>4 times</td>
<td>2 times</td>
</tr>
<tr>
<td>IPM error</td>
<td>5 times</td>
<td>2 times</td>
</tr>
<tr>
<td>CT error</td>
<td>5 times</td>
<td>3 times</td>
</tr>
<tr>
<td>Compressor rotor location cannot detect (permanent stop)</td>
<td>5 times</td>
<td>5 times</td>
</tr>
<tr>
<td>Outdoor unit fan motor error</td>
<td>5 times</td>
<td>6 times</td>
</tr>
<tr>
<td>Connected indoor unit error</td>
<td>5 times</td>
<td>7 times</td>
</tr>
<tr>
<td>Main CPU-Sub CPU communication error</td>
<td>5 times</td>
<td>8 times</td>
</tr>
<tr>
<td>Indoor fan motor abnormal</td>
<td>6 times</td>
<td>2 times</td>
</tr>
<tr>
<td>Discharge temperature error</td>
<td>7 times</td>
<td>2 times</td>
</tr>
<tr>
<td>Excessive high pressure protection on cooling</td>
<td>7 times</td>
<td>3 times</td>
</tr>
<tr>
<td>4 way valve error operation</td>
<td>7 times</td>
<td>4 times</td>
</tr>
<tr>
<td>Pressure switch error</td>
<td>7 times</td>
<td>5 times</td>
</tr>
<tr>
<td>Compressor temperature error</td>
<td>7 times</td>
<td>6 times</td>
</tr>
<tr>
<td>Indoor EEPROM abnormal error</td>
<td>continuance blink</td>
<td>continuance blink</td>
</tr>
</tbody>
</table>

○ : 0.5s ON / 0.5s OFF (Flash)   — : OFF
2-1-2 OUTDOOR UNIT DISPLAY

1. ERROR DISPLAY

<table>
<thead>
<tr>
<th>Error Contents</th>
<th>Error Contents</th>
<th>LED</th>
<th>LED</th>
<th>LED</th>
<th>LED</th>
<th>Trouble shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor communication signal error</td>
<td>Outdoor communication signal error</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>11</td>
</tr>
<tr>
<td>(Forward transfer signal error)</td>
<td>(Forward transfer signal error)</td>
<td>1</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF</td>
<td>1</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OFF</td>
<td>OFF</td>
<td>1</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>2-way valve temperature thermistor A error</td>
<td>2-way valve temperature thermistor A error</td>
<td>5</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>21</td>
</tr>
<tr>
<td>2-way valve temperature thermistor B error</td>
<td>2-way valve temperature thermistor B error</td>
<td>OFF</td>
<td>5</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>2-way valve temperature thermistor C error</td>
<td>2-way valve temperature thermistor C error</td>
<td>OFF</td>
<td>OFF</td>
<td>5</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>2-way valve temperature thermistor D error</td>
<td>2-way valve temperature thermistor D error</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3-way valve temperature thermistor A error</td>
<td>3-way valve temperature thermistor A error</td>
<td>6</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>22</td>
</tr>
<tr>
<td>3-way valve temperature thermistor B error</td>
<td>3-way valve temperature thermistor B error</td>
<td>OFF</td>
<td>6</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>3-way valve temperature thermistor C error</td>
<td>3-way valve temperature thermistor C error</td>
<td>OFF</td>
<td>OFF</td>
<td>6</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>3-way valve temperature thermistor D error</td>
<td>3-way valve temperature thermistor D error</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Compressor temperature thermistor error</td>
<td>Compressor temperature thermistor error</td>
<td>7</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>12</td>
</tr>
<tr>
<td>Heat sink temperature thermistor error</td>
<td>Heat sink temperature thermistor error</td>
<td>8</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>19</td>
</tr>
<tr>
<td>Pressure switch 1 error</td>
<td>Pressure switch 1 error</td>
<td>9</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>13</td>
</tr>
<tr>
<td>Pressure switch 2 error</td>
<td>Pressure switch 2 error</td>
<td>10</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Connected indoor unit error</td>
<td>Connected indoor unit error</td>
<td>11</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>23</td>
</tr>
<tr>
<td>IPM error</td>
<td>IPM error</td>
<td>12</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>14</td>
</tr>
<tr>
<td>Compressor rotor location cannot detect (permanent stop)</td>
<td>Compressor rotor location cannot detect (permanent stop)</td>
<td>13</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>17</td>
</tr>
<tr>
<td>Compressor Start-up error (permanent stop)</td>
<td>Compressor Start-up error (permanent stop)</td>
<td>14</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>20</td>
</tr>
<tr>
<td>Outdoor unit fan motor error</td>
<td>Outdoor unit fan motor error</td>
<td>15</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>18</td>
</tr>
<tr>
<td>Main CPU - sub CPU communication error</td>
<td>Main CPU - sub CPU communication error</td>
<td>17</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>24</td>
</tr>
</tbody>
</table>

2. ERROR DISPLAY METHOD
Outdoor LED Blink (1 to 18 times) 0.5sec ON / 0.5sec OFF blinking

3. NORMAL OPERATION DISPLAY

<table>
<thead>
<tr>
<th>Operation</th>
<th>LED A</th>
<th>LED B</th>
<th>LED C</th>
<th>LED D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal operation</td>
<td>Continuously lighting</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>
2-1-3 WIRED REMOTE CONTROLLER DISPLAY

For ARU9-18RML (AR-3TA)

1. SELF - DIAGNOSIS

When the error indication "E:EE" is displayed, inspection of the air conditioning system is necessary. Please consult authorized service personnel.

Run [Self-Diagnosis] if [E:EE] flashes on the clock display of the remote controller.

1. Stop the air conditioner operation.
2. Press the SET TEMPERATURE buttons and simultaneously for 5 seconds or more to start the self-diagnosis.
3. Press the SET TEMPERATURE buttons and simultaneously for 5 seconds or more or there is no key input for 20 seconds to stop the self-diagnosis.

<table>
<thead>
<tr>
<th>Error code</th>
<th>Error contents</th>
<th>Trouble shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 00</td>
<td>Communication error (indoor unit — remote control)</td>
<td>1</td>
</tr>
<tr>
<td>E 01</td>
<td>Communication error (Serial reverse transfer error)</td>
<td>2</td>
</tr>
<tr>
<td>E 02</td>
<td>Room temperature thermistor open</td>
<td>3</td>
</tr>
<tr>
<td>E 03</td>
<td>Room temperature thermistor short-circuited</td>
<td>4</td>
</tr>
<tr>
<td>E 04</td>
<td>Indoor heat exchanger temperature thermistor open</td>
<td>5</td>
</tr>
<tr>
<td>E 05</td>
<td>Indoor heat exchanger temperature thermistor short-circuited</td>
<td>6</td>
</tr>
<tr>
<td>E 06</td>
<td>Outdoor heat exchanger temperature thermistor open</td>
<td>7</td>
</tr>
<tr>
<td>E 07</td>
<td>Outdoor heat exchanger temperature thermistor short-circuited</td>
<td>8</td>
</tr>
<tr>
<td>E 08</td>
<td>Outdoor discharge pipe temperature thermistor open</td>
<td>9</td>
</tr>
<tr>
<td>E 09</td>
<td>Outdoor discharge pipe temperature thermistor short-circuited</td>
<td>10</td>
</tr>
<tr>
<td>E 10</td>
<td>Heat sink temperature thermistor error</td>
<td>11</td>
</tr>
<tr>
<td>E 11</td>
<td>Discharge pipe temperature thermistor error</td>
<td>12</td>
</tr>
<tr>
<td>E 12</td>
<td>Indoor EEPROM abnormal (Model No.)</td>
<td>13</td>
</tr>
<tr>
<td>E 13</td>
<td>Indoor fan motor abnormal</td>
<td>14</td>
</tr>
<tr>
<td>E 14</td>
<td>Outdoor communication signal error (Forward transfer signal error)</td>
<td>15</td>
</tr>
<tr>
<td>E 15</td>
<td>Excessive high pressure protection on cooling</td>
<td>16</td>
</tr>
<tr>
<td>E 16</td>
<td>Compressor temperature thermistor error</td>
<td>17</td>
</tr>
<tr>
<td>E 17</td>
<td>Pressure switch error</td>
<td>18</td>
</tr>
<tr>
<td>E 18</td>
<td>IPM error</td>
<td>19</td>
</tr>
<tr>
<td>E 19</td>
<td>CT error</td>
<td>20</td>
</tr>
<tr>
<td>E 20</td>
<td>Active Filter Module (AFM) error</td>
<td>21</td>
</tr>
<tr>
<td>E 21</td>
<td>Compressor rotor location cannot detect</td>
<td>22</td>
</tr>
<tr>
<td>E 22</td>
<td>Outdoor unit fan motor error</td>
<td>23</td>
</tr>
<tr>
<td>E 23</td>
<td>Main CPU - sub CPU communication error</td>
<td>24</td>
</tr>
<tr>
<td>E 24</td>
<td>2-way valve temperature thermistor error</td>
<td>25</td>
</tr>
<tr>
<td>E 25</td>
<td>3-way valve temperature thermistor error</td>
<td>26</td>
</tr>
<tr>
<td>E 26</td>
<td>Connected indoor unit error</td>
<td>27</td>
</tr>
</tbody>
</table>
2. ERROR CODE HISTORY DISPLAY

Up to 16 memorized error codes may be displayed for the indoor unit connected to the remote controller.

1. Stop the air conditioner operation.

2. Press the SET TEMPERATURE buttons \( \bigvee, \bigwedge \) simultaneously for 5 seconds or more to start the self-diagnosis.

3. Press the SET TEMPERATURE button to select the error history number.

4. Press the SET TEMPERATURE buttons \( \bigvee, \bigwedge \) simultaneously for 3 seconds or more or there is no key input for 60 seconds to stop the display.
For AUU09-18RML (AR-6TC)

1. SELF - DIAGNOSIS

When "EE" in Temperature Display is displayed, inspection of the air conditioning system is necessary. Please consult authorized service personnel.

Unit number (usually 0)

![Error code diagram]

ex. Self-diagnosis check

<table>
<thead>
<tr>
<th>Error code</th>
<th>Error contents</th>
<th>Trouble shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Communication error (indoor unit → remote control)</td>
<td>1</td>
</tr>
<tr>
<td>01</td>
<td>Communication error (Serial reverse transfer error)</td>
<td>2</td>
</tr>
<tr>
<td>02</td>
<td>Room temperature sensor error</td>
<td>3</td>
</tr>
<tr>
<td>04</td>
<td>Indoor heat exchanger temperature sensor error</td>
<td>4</td>
</tr>
<tr>
<td>05</td>
<td>Outdoor heat exchanger temperature sensor (outlet) error</td>
<td>5</td>
</tr>
<tr>
<td>09</td>
<td>Water drain abnormal</td>
<td>6</td>
</tr>
<tr>
<td>0A</td>
<td>Outdoor temperature sensor error</td>
<td>7</td>
</tr>
<tr>
<td>0C</td>
<td>Outdoor discharge pipe temperature sensor error</td>
<td>8</td>
</tr>
<tr>
<td>0E</td>
<td>Heatsink temperature thermistor error</td>
<td>9</td>
</tr>
<tr>
<td>0F</td>
<td>Discharge temperature error</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>Indoor EEPROM abnormal</td>
<td>11</td>
</tr>
<tr>
<td>12</td>
<td>Indoor fan motor abnormal</td>
<td>12</td>
</tr>
<tr>
<td>13</td>
<td>Outdoor communication signal error (Forward transfer signal error)</td>
<td>13</td>
</tr>
<tr>
<td>15</td>
<td>Compressor temperature sensor error</td>
<td>14</td>
</tr>
<tr>
<td>16</td>
<td>Pressure switch error</td>
<td>15</td>
</tr>
<tr>
<td>18</td>
<td>CT error</td>
<td>16</td>
</tr>
<tr>
<td>19</td>
<td>Active filter module error</td>
<td>17</td>
</tr>
<tr>
<td>1A</td>
<td>Compressor rotor location cannot detect (permanent stop)</td>
<td>18</td>
</tr>
<tr>
<td>1B</td>
<td>Outdoor unit fan motor error</td>
<td>19</td>
</tr>
<tr>
<td>1D</td>
<td>2-way valve temperature thermistor error</td>
<td>20</td>
</tr>
<tr>
<td>1E</td>
<td>3-way valve temperature thermistor error</td>
<td>21</td>
</tr>
<tr>
<td>1F</td>
<td>Main CPU - sub CPU communication error</td>
<td>22</td>
</tr>
<tr>
<td>20</td>
<td>Connected indoor unit error</td>
<td>23</td>
</tr>
<tr>
<td>24</td>
<td>Indoor manual auto switch error</td>
<td>24</td>
</tr>
<tr>
<td>25</td>
<td>Excessive high pressure protection on cooling</td>
<td>25</td>
</tr>
<tr>
<td>26</td>
<td>Communication error (Main PCB → Display PCB)</td>
<td>26</td>
</tr>
<tr>
<td>27</td>
<td>Communication error (Main PCB ← Display PCB)</td>
<td>27</td>
</tr>
<tr>
<td>28</td>
<td>4-way valve error</td>
<td>28</td>
</tr>
</tbody>
</table>

- If "CO" appears in the unit number display, there is a remote controller error. Refer to the installation instruction sheet included with the remote controller.
2. ERROR CODE HISTORY DISPLAY

Up to 16 memorized error codes may be displayed for the indoor unit connected to the remote controller.

1. Stop the air conditioner operation.

2. Press the SET TEMPERATURE buttons \( \vee \), \( \wedge \) and the START/STOP button \( \bigcirc \) simultaneously for 5 seconds or more to start the self-diagnosis.

![Self-diagnosis diagram]

3. Press the START/STOP button.

![Error display diagram]

4. Press the SET TEMPERATURE button to select the error history number.

![Error history selection diagram]

5. Press the SET TEMPERATURE buttons \( \vee \), \( \wedge \) and START/STOP button \( \bigcirc \) simultaneously for 5 seconds or more or there is no key input for 20 seconds to stop the display.
## 2-2 TROUBLE SHOOTING WITH ERROR CODE

<table>
<thead>
<tr>
<th>Trouble shooting</th>
<th>INDOOR UNIT Error Method:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Communication Error</td>
</tr>
<tr>
<td></td>
<td>(Indoor unit ← Remote control)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Detective Actuators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor unit controller PCB circuit</td>
</tr>
<tr>
<td>Wired Remote Control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Detective details:</th>
</tr>
</thead>
<tbody>
<tr>
<td>When the indoor unit cannot receive the signal from Wired Remote more than 10 seconds after power ON, or the indoor unit cannot receive the signal more than 1 minute during normal operation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Forecast of Cause:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Terminal connection abnormal</td>
</tr>
<tr>
<td>2. Wired Remote Control failure</td>
</tr>
<tr>
<td>3. Control PCB failure (AS, AR)</td>
</tr>
<tr>
<td>Main PCB (AU)</td>
</tr>
</tbody>
</table>

### Check Point 1: Check the connection of terminal

- After turning off the power, check & correct the followings.
- Check the connection of terminal between remote control and Indoor unit, and check if there is a disconnection of the cable.

### Check Point 2: Check Remote Control and Control PCB

- Check Voltage at CN10 (AS type) of Control PCB. (Power supply to Remote Control)
  - CN17 (AR type)
  - CN14 (AU type)

  - If it is DC12V, Remote Control is failure. (Control PCB is normal) ➞ Replace Remote Control
  - If it is DC 0V, Control PCB is failure. (Check Remote Control once again) ➞ Replace Control PCB (AS, AR)
  - Main PCB is failure. (Check Remote Control once again) ➞ Replace Main PCB (AU)

> **Upon correcting the removed connector or mis-wiring, reset the power.**
## Trouble shooting 2
### OUTDOOR UNIT Error Method:
**Communication Error**
*Serial Reverse Transfer Error*

### Indicate or Display:
Refer to error code table.

### Detective Actuators:
- Outdoor Unit Main PCB Circuit
- Active Filter Module

### Detective details:
When the indoor unit cannot receive the serial signal from Outdoor unit more than 10 seconds.

### Forecast of Cause:
1. Connection failure
2. External cause
3. Main PCB failure
4. Active Filter Module failure

## Check Points

### Check Point 1-1: Reset the power and operate
- Does Error indication show again?

#### YES

### Check Point 2: Check Connection
- Check any loose or removed connection line of Indoor unit and Outdoor unit.

#### If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.
- Check connection between Outdoor Unit Main PCB and Filter PCB.
  (If there is loose connector or open cable)

### Check Point 1-2:
Check external cause such as noise
- Check the complete insulation of the grounding.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).

### Check Point 3: Check the voltage of power supply
- Check the voltage of power supply

#### Check if AC208 - 230V appears at Outdoor Unit Terminal L - N.

### Check Point 4: Check Serial Signal (Reverse Transfer Signal)
- Check Serial Signal (Reverse Transfer Signal)

#### Check if Indicated value swings between AC70V and AC130V at Outdoor Unit Terminal N - 3.
- If it is abnormal, Check Active Filter Module. (PARTS INFORMATION 3)

#### If Active Filter Module is abnormal, replace it.
- If Active Filter Module is normal, replace Main PCB.
Trouble shooting 3

**INDOOR UNIT Error Method:**
Room Temperature Thermistor Error

**Indicate or Display:**
Refer to error code table.

**Detective Actuators:**
Indoor Unit Control PCB(AS, AR), Main PCB(AU) or Room Temperature Thermistor

**Detective details:**
When Room Temperature Thermistor open or short-circuit is detected at power ON.

**Forecast of Cause:**
1. Connector connection failure
2. Thermistor failure
3. Control PCB (AS,AR), Main PCB (AU) failure

**Check Point 1:**
Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

**Check Point 2:**
Remove connector and check Thermistor resistance value

**Thermistor Characteristics (Approx. value):**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>77°F (25°C)</th>
<th>86°F (30°C)</th>
<th>95°F (35°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>33.6</td>
<td>25.9</td>
<td>20.2</td>
<td>15.8</td>
<td>12.5</td>
<td>10.0</td>
<td>8.04</td>
<td>6.51</td>
</tr>
</tbody>
</table>

Temperature | 104°F (40°C) | 113°F (45°C) | 122°F (50°C) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>5.30</td>
<td>4.35</td>
<td>3.59</td>
</tr>
</tbody>
</table>

**Check Point 3:**
Check voltage of Controller PCB (DC5.0V)

Make sure circuit diagram of indoor unit and check terminal voltage at Thermistor (DC5.0V)

**Thermistor (PIPE TEMP.)**

**Thermistor (ROOM TEMP.)**

**DC**

- If Thermistor is either open or shorted, replace it and reset the power.

- If the voltage does not appear, replace Controller PCB(AS, AR), Main PCB(AU).
Trouble shooting  4
INDOOR UNIT Error Method:
Indoor Heat Exchanger Temperature Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Control PCB (AS, AR), Main PCB (AU) or Room Temperature Thermistor

Detective details:
When Heat Exchanger Temperature Thermistor open or short-circuit is detected at power ON.

Forecast of Cause :
1. Connector connection failure  2. Thermistor failure  3. Control PCB (AS, AR), Main PCB (AU) failure

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>77°F (25°C)</th>
<th>86°F (30°C)</th>
<th>95°F (35°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>176</td>
<td>134</td>
<td>103</td>
<td>80.3</td>
<td>62.9</td>
<td>49.7</td>
<td>39.6</td>
<td>31.7</td>
</tr>
</tbody>
</table>

^If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3: Check voltage of Controller PCB (DC5.0V)

Make sure circuit diagram of indoor unit and check terminal voltage at Thermistor (DC5.0V)

If the voltage does not appear, replace Controller PCB (AS, AR), Main PCB (AU).
Trouble shooting 5
OUTDOOR UNIT Error Method:
Outdoor Heat Exchanger Temperature Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Heat Exchanger Temperature Thermistor

Detective details:
When Heat Exchanger Temperature Thermistor open or short-circuit is detected at power ON or while running the compressor.

Forecast of Cause:
1. Connector connection failure
2. Thermistor failure
3. Main PCB failure

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>14°F (-10°C)</th>
<th>23°F (-5°C)</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>77°F (25°C)</th>
<th>86°F (30°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>27.5</td>
<td>20.9</td>
<td>16.1</td>
<td>12.4</td>
<td>9.73</td>
<td>7.67</td>
<td>6.10</td>
<td>4.89</td>
<td>3.95</td>
</tr>
</tbody>
</table>

If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3: Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

If the voltage does not appear, replace Main PCB.
Trouble shooting 6
INDOOR UNIT Error Method:
Water Drain Abnormal

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Main PCB Circuit
Float Switch

Detective details:
When Float Switch is ON for more than 3 minutes.

Forecast of Cause:
1. Float Switch failure 2. Shorted connector/ wire 3. Main PCB failure

Check Point 1: Check Float Switch

- Check operation of float switch. (any blocking by dust, etc.)
- Remove Float switch and check ON/OFF switching operation by using a meter.
  >>If Float switch is detective, replace it.

Check Point 2: Check Connector (CN9) / Wire

- Check loose contact of CN9 /shorted wire (pinched wire).
  >>Replace Float switch if the wire is abnormal

Check Point 3: Replace Main PCB

▶If Check Point 1 & 2 do not improve the symptom, change Controller PCB.
Trouble shooting  7
OUTDOOR UNIT Error Method:
Indoor Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Main PCB Circuit
Indoor Temperature Thermistor

Detective details:
When Outdoor Temperature Thermistor open or short-circuit is
detected at power ON or while running the compressor.

Forecast of Cause:

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>- 4°F (-20°C)</th>
<th>14°F (-10°C)</th>
<th>23°F (-5°C)</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>115</td>
<td>62.3</td>
<td>46.6</td>
<td>35.2</td>
<td>26.9</td>
<td>20.7</td>
<td>16.1</td>
<td>12.6</td>
</tr>
</tbody>
</table>

Temperature 86°F (30°C)  104°F (40°C)  122°F (50°C)  140°F (60°C)  158°F (70°C)

| Resistance Value (kΩ) | 7.97 | 5.18 | 3.45 | 2.36 | 1.65 |

If Thermistor is either open or shorted, replace it and reset the power.

OK

Check Point 3: Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

If the voltage does not appear, replace Main PCB.
Trouble shooting  8
OUTDOOR UNIT Error Method:
Outdoor Discharge Pipe Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Discharge Pipe Temperature Thermistor

Detective details:
When Discharge Pipe Temperature Thermistor open or short-circuit
is detected at power ON or while running the compressor.

Forecast of Cause:

Check Point 1 : Check connection of Connector

- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2 : Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>86°F (30°C)</th>
<th>104°F (40°C)</th>
<th>122°F (50°C)</th>
<th>140°F (60°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>176</td>
<td>135</td>
<td>105</td>
<td>81.8</td>
<td>64.5</td>
<td>41.1</td>
<td>26.9</td>
<td>18.1</td>
<td>12.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>158°F (70°C)</th>
<th>176°F (80°C)</th>
<th>194°F (90°C)</th>
<th>212°F (100°C)</th>
<th>248°F (120°C)</th>
<th>284°F (140°C)</th>
<th>320°F (160°C)</th>
<th>356°F (180°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>8.78</td>
<td>6.31</td>
<td>4.61</td>
<td>3.43</td>
<td>1.98</td>
<td>1.21</td>
<td>0.77</td>
<td>0.51</td>
</tr>
</tbody>
</table>

► If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3 : Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

► If the voltage does not appear, replace Main PCB.
**Trouble shooting 9**

**INDOOR UNIT Error Method:**
Indoor EEPROM abnormal (Model No.)

**Indicate or Display:**
Refer to error code table.

**Detective Actuators:**
Indoor Unit Control PCB (AS,AR), Main PCB (AU) circuit

**Detective details:**
When the model information being read from EEPROM has an apparent error.

**Forecast of Cause:**
1. External cause  
2. Defective connection of electric components  
3. Control PCB failure (AS,AR), Main PCB (AU)

**Check Point 1-1:** Reset Power Supply and operate

- Does Error indication show again?

**Check Point 2:**
Check Indoor Unit electric components

- Check all connectors. (loose connector or incorrect wiring)
- Check any shortage or corrosion on PCB.

**Check Point 3:** Replace Controller PCB

**Check Point 1-2:**
Check external cause at Indoor and Outdoor (Voltage drop or Noise)

- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
  Check the complete insulation of grounding.

**Note: EEPROM**
EEPROM (Electronically Erasable and Programmable Read Only Memory) is a non-volatile memory which keeps memorized information even if power is turned off. It can change the contents electronically.
To change the contents, it uses higher voltage than normal, and it can not change a partial contents. (Rewriting shall be done upon erasing the all contents.) There is a limit in a number of rewriting.

---

02-16
Trouble shooting 10

INDOOR UNIT Error Method:
Indoor Fan Motor abnormal

<table>
<thead>
<tr>
<th>Detective Actuators:</th>
<th>Detective details:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indoor Unit Control PCB (AS,AR), Main PCB, Power PCB (AU) Circuit. Indoor Fan Motor</td>
<td>When the condition that actual frequency of Indoor Fan is below 1/3 of target frequency is continued more than 56 seconds. Or the condition of fan speed is 0rpm is continued more than 56 seconds.</td>
</tr>
</tbody>
</table>

Indicate or Display:
Refer to error code table.

Forecast of Cause:
1. Fan rotation failure  
2. Motor protection by surrounding temperature rise  
3. Control PCB (AS,AR), Main PCB, Power PCB (AU)

Check Point 1: Check rotation of Fan

| · Rotate the fan by hand when operation is off. (Check if fan is caught, dropped off or locked motor) |
| >>If Fan or Bearing is abnormal, replace it. |

OK

Check Point 2: Check ambient temp. around motor

| · Check excessively high temperature around the motor. (If there is any surrounding equipment that causes heat) |
| >>Upon the temperature coming down, restart operation. |

OK

Check Point 3: Replace Control PCB

| If Check Point 1,2 do not improve the symptom, change Control PCB (AS,AR), Main PCB, Power PCB (AU). |
Trouble shooting 11
INDOOR UNIT Error Method:
Outdoor Communication Signal Error
(Forward Transfer Signal Error)

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Control PCB (AS,AR),
Main PCB, Power PCB (AU) Circuit

Detective details:
When the outdoor unit cannot receive the serial signal from Indoor unit
more than 10 seconds.

Forecast of Cause:
1. Connection failure
2. External cause
3. Controll PCB (AS,AR), Main PCB, Power PCB (AU) failure

Check Point 1-1 : Reset the power
- Does Error indication reappear?

Check Point 2 : Check Connection
- Check any loose or removed connection line of
  Indoor unit and Outdoor unit.
  **If there is an abnormal condition, correct it by referring to Installation Manual or Data &
  Technical Manual.**
- Check connection between Indoor Unit Control PCB and Filter PCB.(AR)
  (If there is loose connector or open cable)
- Check connection between Indoor Unit Main PCB and Power PCB.(AU)
  (If there is loose connector or open cable)

Check Point 1-2:
Check external cause such as noise
- Check the complete insulation of the grounding.
- Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic
equipment which causes harmonic wave).

Check Point 3 : Check the voltage of power supply
- Check the voltage of power supply
  **Check if AC208 - 230V appears at Outdoor Unit Terminal L - N.**

Check Point 4 : Check Serial Signal (Forward Transfer Signal)
- Check Serial Signal (Forward Transfer Signal)
  **Check if Indicated value swings between AC70V and AC130V at Outdoor Unit Terminal N - 3.**
  **If it is abnormal, Controller PCB is failure. >> Replace Control PCB (AS,AR),
  Main PCB, Power PCB (AU).**

![Diagram of power connections]
Trouble shooting 12
OUTDOOR UNIT Error Method:
Compressor Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Compressor Temperature Thermistor

Detective details:
When Compressor Temperature Thermistor open or short-circuit is
detected at power ON or while running the compressor.

Forecast of Cause:

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Rough value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>86°F (30°C)</th>
<th>104°F (40°C)</th>
<th>122°F (50°C)</th>
<th>140°F (60°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>176</td>
<td>135</td>
<td>105</td>
<td>81.8</td>
<td>64.5</td>
<td>41.1</td>
<td>26.9</td>
<td>18.1</td>
<td>12.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>158°F (70°C)</th>
<th>176°F (80°C)</th>
<th>194°F (90°C)</th>
<th>212°F (100°C)</th>
<th>248°F (120°C)</th>
<th>284°F (140°C)</th>
<th>320°F (160°C)</th>
<th>356°F (180°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>8.78</td>
<td>6.31</td>
<td>4.61</td>
<td>3.43</td>
<td>1.98</td>
<td>1.21</td>
<td>0.77</td>
<td>0.51</td>
</tr>
</tbody>
</table>

►If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3: Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

►If the voltage does not appear, replace Main PCB.
Detective Actuators:
Outdoor Unit Main PCB Circuit
Pressure Switch

Detective details:
When pressure switch open is detected in 10 seconds after the power is turned on.

Forecast of Cause:
1. Connector connection failure
2. Pressure Switch failure
3. Main PCB failure

Check Point 1: Reset Power Supply and operate
· Does abnormal LED indication show again?

Check Point 2: Check voltage of Main PCB (DC5.0V)
· Make sure circuit diagram of outdoor unit and check terminal voltage at Pressure Switch. (DC5.0V)

If the voltage does not appear, replace Main PCB.

Check Point 3: Check Pressure Switch
· Check if connector is loose or cable is open.
   >> If no abnormal connection is found, replace Pressure Switch.
   ▶ After replacing Pressure Switch, check operating condition and pressure in operation.

Check Point 4: Check High Pressure Protection on cooling
· Check Excessive high pressure protection on cooling.
   (Refer to Trouble shooting 31)
Trouble shooting 14
OUTDOOR UNIT Error Method:
IPM error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Compressor

Detective details:
① When more than normal operating current to IPM in Main PCB flows, the compressor stops.
② After the compressor restarts, if the same operation is repeated within 40sec, the compressor stops again.
③ If ① and ② repeats 5 times, the compressor stops permanently.

Forecast of Cause:
1. Defective connection of electric components  2. Outdoor Fan Operation failure
5. Main PCB failure

Check Point 1: Check connections of Outdoor Unit Electrical Components
• Check if the terminal connection is loose.
• Check if connector is removed.
• Check erroneous connection.
• Check if cable is open.
>>> Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2: Check Outdoor Fan, Heat Exchanger
• Is there anything obstructing the air distribution circuit?
• Is there any clogging of Outdoor Heat Exchanger?
• Is the Fan rotating by hand when operation is off?
  >>> If the Fan Motor is locked, replace it.
• Check Outdoor Fan Motor. (Refer to Trouble shooting 18)
  >>> If the Fan Motor is failure, replace it.

OK

Check Point 3: Check Compressor
• Check Compressor. (PARTS INFORMATION 2)

OK

Check Point 4: Replace Main PCB

If Check Point 1, 2, 3 do not improve the symptom, change Main PCB.
Trouble shooting 15
OUTDOOR UNIT Error Method:
CT error

Indicate or Display:
Refer to error code table.

Detective Actuators:
- Outdoor Unit Main PCB Circuit
- Outdoor Unit Filter PCB Circuit
  (Input current sensor unit)

Detective details:
When Input Current Sensor has detected lower than 0A
while Inverter Compressor is operating at higher than 50Hz,
after 1 minute upon starting the Compressor.
(Except during the defrost operation)

Forecast of Cause:
1. Defective connection of electric components
2. External cause
3. Filter PCB failure
4. Main PCB failure

Check Point 1-1:
Reset Power Supply and operate
- Does Error indication show again?
  YES
  NO

Check Point 2:
Check connections of Outdoor Unit Electrical Components
- Check if the terminal connection is loose.
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.

Upon correcting the removed connector or mis-wiring,
reset the power.

Check Point 1-2:
Check external cause at Indoor and Outdoor
(Voltage drop or Noise)
- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line (Neon bulb or electric equipment that may cause harmonic wave)
  Check the complete insulation of grounding.

Check Point 3:
Check Filter PCB and Main PCB
- Check DC voltage of CN1 (between 2 (Brown) and 3 (Red)) on Filter PCB.
  After 40 seconds upon starting the Compressor,
  If it is higher than 0.2V, Main PCB is failure. (Filter PCB is normal) Replace Main PCB
  If it is lower than 0.2V, Filter PCB is failure. Replace Filter PCB

If it does not improve the symptom, change Main PCB.
Indicate or Display:
Refer to error code table.

Detective Actuators:
- Outdoor Unit Main PCB Circuit
- Active Filter Module

Detective details:
When inverter input DC voltage is higher than 467V or lower than 237V.
When a momentary power cut off occurred on low voltage.

Forecast of Cause:
1. External cause
2. Connector connection failure
3. Active Filter Module failure
4. Main PCB failure

Check Point 1: Check external cause at Indoor and Outdoor (Voltage drop or Noise)
- Instant drop: Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure: Check if there is a defective contact or leak current in the power supply circuit.
- Noise: Check if there is any equipment causing harmonic wave near electric line.
  (Neon bulb or electric equipment that may cause harmonic wave)
  Check the complete insulation of grounding.

Check Point 2: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.
  >>>Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 3: Check Active Filter Module
- Check Active Filter Module. (PARTS INFORMATION 3)
  >>>If Active Filter Module is abnormal, replace it.

Check Point 4: Replace Main PCB
- If Check Point 1, 2 do not improve the symptom, change Main PCB.
**Trouble shooting 17**

**OUTDOOR UNIT Error Method:**
Compressor rotor location cannot detect (Permanent Stop)

<table>
<thead>
<tr>
<th><strong>Indicate or Display:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to error code table.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Detective Actuators:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor Unit Main PCB Circuit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Detective details:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>① While running the compressor, if the detected rotor location is out of phase with actual rotor location more than 90 degrees, the compressor stops.</td>
</tr>
<tr>
<td>② After the compressor restarts, if the same operation is repeated within 40sec, the compressor stops again.</td>
</tr>
<tr>
<td>③ If ① and ② repeats 5 times, the compressor stops permanently.</td>
</tr>
</tbody>
</table>

**Forecast of Cause:**
1. Defective connection of electric components  
2. Main PCB failure

<table>
<thead>
<tr>
<th><strong>Check Point 1:</strong> Check connection of around the Compressor components</th>
</tr>
</thead>
</table>

For Compressor Terminal, Main PCB
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.
  (Refer to PARTS INFORMATION 2)

>>Upon correcting the removed connector or mis-wiring, reset the power.

**OK**

<table>
<thead>
<tr>
<th><strong>Check Point 2:</strong> Replace Main PCB</th>
</tr>
</thead>
</table>

♫ If Check Point 1 do not improve the symptom, change Main PCB. ♫
**Trouble shooting**

**18 OUTDOOR UNIT Error Method:**

**Outdoor Unit Fan Motor Error**

**Detective Actuators:**
- Outdoor Unit Main PCB Circuit
- Outdoor Fan Motor

**Detective details:**
1. When outdoor fan rotation speed is less than 100rpm in 20 seconds after fan motor starts, fan motor stops.
2. After fan motor restarts, if the same operation within 60sec is repeated 3 times in a row, compressor and fan motor stops.
3. If 1 and 2 repeats 5 times in a row, compressor and fan motor stops permanently.

**Forecast of Cause:**
1. Fan rotation failure
2. Motor protection by surrounding temperature rise
3. Main PCB failure

**Check Point 1:** Check rotation of Fan

- Rotate the fan by hand when operation is off.
  (Check if fan is caught, dropped off or locked motor)

>>If Fan or Bearing is abnormal, replace it.

**OK**

**Check Point 2:** Check ambient temp. around motor

- Check excessively high temperature around the motor.
  (If there is any surrounding equipment that causes heat)

>>Upon the temperature coming down, restart operation.

**OK**

**Check Point 3:** Check Output Voltage of Main PCB

- Check outdoor unit circuit diagram and the voltage.
  (Measure at Main PCB side connector)

**CN802**

<table>
<thead>
<tr>
<th>Wire</th>
<th>DC voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED - BLACK</td>
<td>150~380V</td>
</tr>
<tr>
<td>WHITE - BLACK</td>
<td>15 ± 1.5V</td>
</tr>
</tbody>
</table>

—if the voltage is not correct, replace Main PCB.
 Trouble shooting  19
OUTDOOR UNIT Error Method:
Heat Sink Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Heat Sink Temperature Thermistor

Detective details:
When Heat Sink Temperature Thermistor open or short-circuit is
detected at power ON or while running the compressor.

Forecast of Cause:

Check Point 1 : Check connection of Connector
• Check if connector is removed.
• Check erroneous connection.
• Check if thermistor cable is open.

>>>Upon correcting the removed connector or mis-wiring, reset the power.<<<

Check Point 2 : Remove connector and check Thermistor resistance value
Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>32°F (0°C)</th>
<th>41°F (5°C)</th>
<th>50°F (10°C)</th>
<th>59°F (15°C)</th>
<th>68°F (20°C)</th>
<th>86°F (30°C)</th>
<th>104°F (40°C)</th>
<th>122°F (50°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>16.1</td>
<td>12.4</td>
<td>9.73</td>
<td>7.67</td>
<td>6.10</td>
<td>3.95</td>
<td>2.62</td>
<td>1.79</td>
</tr>
</tbody>
</table>

Temperature | 140°F (60°C) | 158°F (70°C) | 176°F (80°C) | 194°F (90°C) | 212°F (100°C) | 230°F (110°C) | 248°F (120°C) |
Resistance Value (kΩ) | 1.25       | 0.89        | 0.65        | 0.48        | 0.36        | 0.27        | 0.21        |

► If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3 : Check voltage of Main PCB (DC5.0V)
Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

► If the voltage does not appear, replace Main PCB.
**Trouble shooting 20**

**OUTDOOR UNIT Error Method:**
Compressor Start-up error (Permanent Stop)

<table>
<thead>
<tr>
<th><strong>Detective Actuators:</strong></th>
<th><strong>Detective details:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor Unit Main PCB Circuit</td>
<td>① The detect rotor position operation is repeat up to 50 times. 3min ST operates if the compressor fails on start-up, it start try again of the detect rotor position operation. ② If start try repeats 3 times, the compressor stops permanently.</td>
</tr>
</tbody>
</table>

**Indicate or Display:** Refer to error code table.

**Forecast of Cause:**
1. Defective connection of electric components
2. Main PCB failure

**Check Point 1:** Check connection of around the Compressor components

- For Compressor Terminal, Main PCB
  - Check if connector is removed.
  - Check erroneous connection.
  - Check if cable is open.
  (Refer to PARTS INFORMATION 2)

>> Upon correcting the removed connector or mis-wiring, reset the power. OK

**Check Point 2:** Replace Main PCB

If Check Point 1 do not improve the symptom, replace Main PCB.
Trouble shooting  21
OUTDOOR UNIT Error Method:

2-way valve Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
2-way valve Temperature Thermistor

Detective details:
When 2-way valve Temperature Thermistor open or short-circuit is
detected at power ON or while running the compressor.

Forecast of Cause:

Check Point 1: Check connection of Connector

• Check if connector is removed.
• Check erroneous connection.
• Check if thermistor cable is open.

>>Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>14°F (-10°C)</th>
<th>23°F (0°C)</th>
<th>32°F (5°C)</th>
<th>41°F (10°C)</th>
<th>50°F (15°C)</th>
<th>59°F (20°C)</th>
<th>68°F (25°C)</th>
<th>86°F (30°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>312</td>
<td>233</td>
<td>176</td>
<td>134</td>
<td>103</td>
<td>80.3</td>
<td>62.9</td>
<td>39.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature</th>
<th>104°F (40°C)</th>
<th>122°F (50°C)</th>
<th>140°F (60°C)</th>
<th>158°F (70°C)</th>
<th>176°F (80°C)</th>
<th>194°F (90°C)</th>
<th>212°F (100°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance Value (kΩ)</td>
<td>25.6</td>
<td>17.1</td>
<td>11.6</td>
<td>8.12</td>
<td>5.78</td>
<td>4.19</td>
<td>3.09</td>
</tr>
</tbody>
</table>

If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3: Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

AOU24RML

AOU36RML

If the voltage does not appear, replace Main PCB.
Trouble shooting 22
OUTDOOR UNIT Error Method:
3-way valve Temperature
Thermistor Error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
3-way valve Temperature Thermistor

Detective details:
When 3-way valve Temperature Thermistor open or short-circuit is
detected at power ON or while running the compressor.

Forecast of Cause:
1. Connector connection failure
2. Thermistor failure
3. Main PCB failure

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Remove connector and check Thermistor resistance value

Thermistor Characteristics (Approx. value)

<table>
<thead>
<tr>
<th>Temperature</th>
<th>14°F (-10°C)</th>
<th>23°F (-5°C)</th>
<th>32°F (0°C)</th>
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<td>134</td>
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<th>212°F (100°C)</th>
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<tr>
<td>Resistance Value (kΩ)</td>
<td>25.6</td>
<td>17.1</td>
<td>11.6</td>
<td>8.12</td>
<td>5.78</td>
<td>4.19</td>
<td>3.09</td>
</tr>
</tbody>
</table>

If Thermistor is either open or shorted, replace it and reset the power.

Check Point 3: Check voltage of Main PCB (DC5.0V)

Make sure circuit diagram of outdoor unit and check terminal voltage at Thermistor (DC5.0V)

If the voltage does not appear, replace Main PCB.
## Trouble shooting 23
### OUTDOOR UNIT Error Method:
Connected Indoor unit error

<table>
<thead>
<tr>
<th>Indicate or Display:</th>
<th>Refer to error code table.</th>
</tr>
</thead>
</table>

### Detective Actuators:
Outdoor Unit Main PCB Circuit

<table>
<thead>
<tr>
<th>Detective details:</th>
<th>When the total capacity of the connected indoor units exceed the connectable range of the total capacity.</th>
</tr>
</thead>
</table>

### Forecast of Cause:
1. The selection of connected indoor unit is incorrect
2. Main PCB failure

### Check Point 1: Check the total capacity of indoor unit
- Check the total capacity of the connected indoor units.

```
>>If abnormal condition is found, correct it by referring to Installation Manual or Data & Technical Manual.
```

OK

### Check Point 2: Replace Main PCB
- If Check Point 1 do not improve the symptom, change Main PCB.

---

## Trouble shooting 24
### OUTDOOR UNIT Error Method:
Main CPU - Sub CPU communication error

<table>
<thead>
<tr>
<th>Indicate or Display:</th>
<th>Refer to error code table.</th>
</tr>
</thead>
</table>

### Detective Actuators:
Outdoor Unit Main PCB Circuit

<table>
<thead>
<tr>
<th>Detective details:</th>
<th>When it cannot receive an effective signal for 10sec between the Main CPU and Sub CPU in outdoor unit.</th>
</tr>
</thead>
</table>

### Forecast of Cause:
1. Main PCB failure

### Check Point 1: Replace Main PCB
- Change Main PCB.
Trouble shooting 25
INDOOR UNIT Error Method:
Manual auto switch error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Control PCB Circuit (AS)
Main PCB Circuit (AU)
Display PCB (AU)
Manual auto switch

Detective details:
When the manual auto switch becomes ON for 60 consecutive seconds.(AS)
30 consecutive seconds.(AU)

Forecast of Cause:
1. Forced auto switch failure  2. Controller PCB failure

Check Point 1: Check the Forced auto switch
- Check if Forced auto switch is kept pressed.
- Check ON/OFF switching operation by using a meter.
  >>If Forced auto switch is detective, replace it.

OK

Check Point 2: Replace Controller PCB

► If Check Point 1 do not improve the symptom, change Control PCB. (AS)
  change Control PCB. (AU)
  change Display PCB. (AU)
Trouble shooting 26
INDOOR UNIT Error Method:
Power supply frequency
detection error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Control PCB Circuit (AS,AR)

Detective details:
The power supply frequency cannot be recognized after 4sec of power ON.

Forecast of Cause:

Check Point 1-1 : Reset the power and operate
· Does Error indication show again?

YES

Check Point 2 : Check Connection
· Check any loose or removed connection line of Indoor unit and Outdoor unit.
   >> If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.
· Check connection between Outdoor Unit Main PCB and Filter PCB.
   (If there is loose connector or open cable)

OK

Check Point 1-2:
Check external cause such as noise
· Check the complete insulation of the grounding.
· Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).

Check Point 3 : Check Connection
· Check any loose or removed connection line of Indoor unit and Outdoor unit.
   >> If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.
· Check connection between Outdoor Unit Main PCB and Filter PCB.
   (If there is loose connector or open cable)

OK

Check Point 3 : Check the voltage of power supply
· Check the voltage of power supply
   >> Check if AC208 - 230V appears at Outdoor Unit Terminal L - N.

OK

Check Point 3 : Replace Controller PCB

If Check Point 1～3 do not improve the symptom, change Control PCB Circuit (AS,AR).
Trouble shooting 27
INDOOR UNIT Error Method:
Communication Error
(Main PCB --> Display PCB)

Indicate or Display:
Refer to error code table.

Detective Actuators:
Indoor Unit Main PCB Circuit
Display PCB

Detective details:
When the Display PCB cannot receive the signal from the Main PCB.

Forecast of Cause:

Check Point 1-1: Reset the power and operate
• Does Error indication show again?

Check Point 2: Check Connection
• Check connection between Main PCB and Display PCB.
  (If there is loose connector or open cable)

Check Point 1-2:
Check external cause such as noise
• Check the complete insulation of the grounding.
• Check if there is any equipment that causes harmonic wave
  near the power cable (Neon light bulb or any electronic
  equipment which causes harmonic wave).

Check Point 3: Replace Display PCB

>> If Check Point 1, 2 do not improve the symptom, change Display PCB.
(If the symptom does not change, replace Main PCB.)
**Trouble shooting 28**

**INDOOR UNIT Error Method:**
- Communication Error (Main PCB <--- Display PCB)

**Indicate or Display:**
- Refer to error code table.

**Detective Actuators:**
- Indoor Unit Main PCB Circuit
- Display PCB

**Detective details:**
- When the Main PCB cannot receive the signal from the Display PCB.

**Forecast of Cause:**
1. Connection failure
2. External cause
3. Display PCB failure
4. Main PCB failure

---

**Check Point 1-1:** Reset the power and operate
- Does Error indication show again?

**Check Point 1-2:**
- Check external cause such as noise
  - Check the complete insulation of the grounding.
  - Check if there is any equipment that causes harmonic wave near the power cable (Neon light bulb or any electronic equipment which causes harmonic wave).

---

**Check Point 2:** Check Connection
- Check connection between Main PCB and Display PCB.
  - (If there is loose connector or open cable)

**Check Point 3:** Replace Display PCB

>> If Check Point 1, 2 do not improve the symptom, change Display PCB.
(If the symptom does not change, replace Main PCB.)
Trouble shooting  29
INDOOR UNIT Error Method:
VDD permanence stop protection
(Electric air clean)

Indicate or Display:
Refer to error code table.

Detective Actuators:
- Electric air clean unit
- Indoor Unit Control PCB Circuit

Detective details:
When the air cleanliness monitor trial protection operates 4 times.

Forecast of Cause:
1. Electric air clean unit failure
2. Control PCB failure

Check Point 1: Check the Electric air clean unit

- Check the front panel is closed.
- Check the Micro switch in Electric air clean unit.
  (Check ON/OFF switching operation by using a meter.)
  >>If Micro switch is detective, replace Electric air clean unit.

OK

Check Point 2: Replace Controller PCB

✓ If Check Point 1 do not improve the symptom, change Control PCB.

---

Trouble shooting  30
INDOOR UNIT Error Method:
Reverse-VDD permanence stop protection
(Electric air clean power supply circuit abnormal)

Indicate or Display:
Refer to error code table.

Detective Actuators:
- Electric air clean unit
- Indoor Unit Control PCB Circuit

Detective details:
The air clean operation signal was detected for 1 minute at the time of air clean mode OFF.

Forecast of Cause:
1. Electric air clean unit failure
2. Control PCB failure

Check Point 1: Replace Electric air clean unit

✓ Change Electric air clean unit.

OK

Check Point 2: Replace Controller PCB

✓ If Check Point 1 do not improve the symptom, change Control PCB.
Trouble shooting 31
OUTDOOR UNIT Error Method:
Discharge temperature error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Discharge Pipe Temperature Thermistor

Detective details:
When the discharge temperature becomes higher than 115°C, the compressor stops.

Forecast of Cause:
1. Valve is close  2. EEV failure  3. Gas Leak, less  4. Discharge Thermistor failure
5. Outdoor Fan Operation failure  6. Outdoor Heat Exchanger clogged

< Cooling mode >
Check Point 1 : Check if Gas Valve is open
   • If it is not open, open it and check the operation.
   OK

Check Point 2 : Check EEV and Strainer
   • Are EEV and Strainer open? (Refer to PARTS INFORMATION 4)
     >>If EEV or Strainer is defective, replace it.
   OK

Check Point 3 : Check if gas leak or less gas
   • Measure Gas pressure, if there is a leak, correct it.
     >>If recharging refrigerant, make sure to perform vacuuming and recharge the specified amount.
   OK

Check Point 4 : Check Discharge Thermistor
   • Isn’t it fallen off the holder?
   • Is there a cable pinched?
     >> Check characteristics of thermistor (Refer to Trouble shooting 8).
       If defective, replace the thermistor
   OK

Check Point 5 : Check Outdoor FAN, Heat Exchanger
   • Is there anything obstructing the air distribution circuit?
   • Is there any clogging of Outdoor Heat Exchanger?
   • Is the Fan rotating? (Check by hand and if it is locked, replace the motor)
   • Check Outdoor Fan Motor.
     >>If the Fan Motor is defective, replace it.

< Heating mode >
Check Point 1 : Check if Liquid Valve is open
   • If it is not open, open it and check the operation.
   OK

Check Point 2 : Check EEV and Strainer
   • Are EEV and Strainer open? (Refer to PARTS INFORMATION 4)
     >>If EEV or Strainer is defective, replace it.
   OK
Trouble shooting  32

OUTDOOR UNIT Error Method:
Excessive high pressure protection on cooling

Indicate or Display:
Refer to error code table.

Detective Actuators:
- Outdoor Unit Main PCB Circuit
- Outdoor Fan Motor
- Heat Exchanger Temp. Thermistor
- Outdoor unit Electronic Expansion Valve

Detective details:
Excessive high pressure protection on cooling mode has been activated.

Forecast of Cause:
1. Defective connection of electric components
2. Outdoor Fan Operation failure
3. Outdoor Heat Exchanger clogged
4. Thermistor failure
5. EEV failure
6. Main PCB failure

Check Point 1: Check connections of Outdoor Unit Electrical Components
- Check if the terminal connection is loose.
- Check if connector is removed.
- Check erroneous connection.
- Check if cable is open.
  >> Upon correcting the removed connector or mis-wiring, reset the power.

Check Point 2: Check Outdoor Fan, Heat Exchanger
- Is there anything obstructing the air distribution circuit?
- Is there any clogging of Outdoor Heat Exchanger?
- Is the Fan rotating by hand when operation is off?
  >> If the Fan Motor is locked, replace it.

Check Point 3: Check Outdoor Fan
- Check Outdoor Fan Motor. (Refer to Trouble shooting 18)
  >> If the Fan Motor is failure, replace it.

Check Point 4: Check Thermistor
- Check Thermistor. (Refer to Trouble shooting 5)
  >> If the Thermistor is failure, replace it.

Check Point 5: Check Electronic Expansion Valve
- Check EEV. (PARTS INFORMATION 4)

Check Point 6: Replace Main PCB
  If Check Point 1~ 5 do not improve the symptom, change Main PCB.
Trouble shooting 33

OUTDOOR UNIT Error Method:
Compressor temperature error

Indicate or Display:
Refer to error code table.

Detective Actuators:
Outdoor Unit Main PCB Circuit
Compressor Temperature Thermistor

Detective details:
When the compressor temperature becomes higher than 125°C, the compressor stops.

Forecast of Cause:
1. Valve is close  2. EEV failure  3. Gas Leak, less  4. Compressor Thermistor failure
5. Outdoor Fan Operation failure  6. Outdoor Heat Exchanger clogged

< Cooling mode >

Check Point 1 : Check if Gas Valve is open
  · If it is not open, open it and check the operation.
  OK

Check Point 2 : Check EEV and Strainer
  · Are EEV and Strainer open? (Refer to PARTS INFORMATION 4)
  >>If EEV or Strainer is defective, replace it.

Check Point 3 : Check gas leak or less gas
  · Measure Gas pressure, if there is a leak, correct it.
  >>If recharging refrigerant, make sure to perform vacuuming and recharge the specified amount.
  OK

Check Point 4 : Check Compressor Thermistor
  · Isn’t it fallen off the holder?
  · Is there a cable pinched?
  >> Check characteristics of thermistor (Refer to Trouble shooting 12),
  If defective, replace the thermistor
  OK

Check Point 5 : Check Outdoor FAN, Heat Exchanger
  · Is there anything obstructing the air distribution circuit?
  · Is there any clogging of Outdoor Heat Exchanger?
  · Is the Fan rotating? (Check by hand and if it is locked, replace the motor)
  · Check Outdoor Fan Motor.
  >>If the Fan Motor is defective, replace it.
Trouble shooting 35
OUTDOOR UNIT Error Method:
4-way valve error

Indicate or Display: Refer to error code table.

Detective Actuators:
- Outdoor Unit Main PCB Circuit
- Heat Exchanger Temperature
- Thermistor (middle)
- Indoor Temperature Thermistor
- 4-way valve

Detective details:
1. The following condition is monitored every one minute after the compressor operates consecutively for 19 minutes, and 7 min ST operates when the condition is detected two times in succession.
   - < Cooling or Dry operation >
     - [Indoor heat exchanger temp (middle)] - [Room temp] > +10degC
   - < Heating operation >
     - [Indoor heat exchanger temp (middle)] - [Room temp] < -10degC
2. The compressor restarts after 7 min ST is released.
   - When the continuance operation time of the compressor becomes 19 minutes, it detect difference between the heat exchanger temperature (middle) and room temperature again.
3. When protective function 1 2 repeats five times, the outdoor unit stops permanently and displays an error.

Forecast of Cause:
1. Connector connection failure
2. Thermistor failure
3. Coil failure
4. 4-way valve failure
5. Main PCB failure

Check Point 1: Check connection of Connector
- Check if connector is removed.
- Check erroneous connection.
- Check if thermistor cable is open.

>> Upon correcting the removed connector or mis-wiring, reset the power.

OK

Check Point 2: Check thermistor
- Isn’t it fallen off the holder?
- Is there a cable pinched?

>> Check characteristics of thermistor
   - If defective, replace the thermistor

OK

Check Point 3: Check the solenoid coil and 4-way valve

[ Solenoid coil ]
- Remove CN30 from PCB and check the resistance value of coil.
  - Resistance value is about 1.4kΩ
  >> If it is Open or abnormal resistance value, replace Solenoid Coil.

[ 4-way valve ]
- Check each piping temperature,
  - and the location of the valve by the temperature difference.
  >> If the value location is not proper, replace 4-way valve.

OK

Check Point 4: Replace Main PCB

► If Check Point 1-3 do not improve the symptom, replace Main PCB.
Trouble shooting 36
Indoor Unit - No Power

Forecast of Cause:
1. Power Supply failure
2. External cause
3. Electrical Components defective

Check Point 1: Check Installation Condition

- Isn't the breaker down?
- Check loose or removed connection cable.

>> If abnormal condition is found, correct it by referring to Installation Manual or Data & Technical Manual.

Check Point 2: Check external cause at Indoor and Outdoor (Voltage drop or Noise)

- Instant drop — Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure — Check if there is a defective contact or leak current in the power supply circuit.
- Noise — Check if there is any equipment causing harmonic wave near electric line. (Neon bulb or electric equipment that may cause harmonic wave)
  Check the complete insulation of grounding.

Check Point 3: Check Electrical Components

- Check Fuse (250V 10A) for the indoor unit power supply line in the outdoor unit.
  >> If Fuse is open, check AC208 - 230V appears at outdoor Unit Terminal L - N and Power Supply PCB in outdoor unit, and replace Fuse.

- Check Voltage of power supply.
  >> Check AC208 - 230V appears at Indoor Unit Terminal L - N (Power Supply).

- Check Fuse (F101) in Filter PCB. (AR)
  >> If Fuse is open, check if the wiring between Terminal and Filter PCB is loose, and replace Fuse.

- Check Fuse (F101) in Power PCB. (AU)
  >> If Fuse is open, check if the wiring between Terminal and Power PCB and Main PCB is loose, and replace Fuse.

- Check Fuse (F1) in Control PCB. (AS)
  >> If Fuse is open, check if the wiring between Terminal and Control PCB is loose, and replace Fuse.

- Check Varistor (VA101, VA102) in Filter PCB. (AS,AR)
  Control PCB. (AU)
  >> If Varistor is defective, there is a possibility of an abnormal power supply.
  Check the correct power supply and replace Varistor.

- If the symptom does not change by above Check 3, replace Filter PCB. (AR), replace Control PCB. (AS), replace Power PCB. (AU)
Trouble shooting 37
Outdoor Unit - No Power

Forecast of Cause:
1. Power Supply failure  
2. External cause  
3. Electrical Components defective

Check Point 1: Check Installation Condition

- Isn’t the breaker down?
- Check loose or removed connection cable.

>> If abnormal condition is found, correct it by referring to Installation Manual or Data & Technical Manual.

OK

Check Point 2: Check external cause at Indoor and Outdoor (Voltage drop or Noise)

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line.  
  (Neon bulb or electric equipment that may cause harmonic wave)
  Check the complete insulation of grounding.

OK

Check Point 3: Check Electrical Components

- Check the voltage of power supply.
  >> Check if AC208 - 230V appears at Outdoor Unit Terminal L - N.

YES

- Check Fuse (F2, F4) in Main PCB.
  >> If Fuse is open, check loose terminal or removed connector (CN1), and replace Fuse.
- Check Varistor in Main PCB (VA103).
  >> If Varistor is defective, there is a possibility of an abnormal power supply.
    Check the correct power supply and replace Varistor.
    Upon checking the normal power supply, replace Varistor.

YES

- Check Active Filter Module. (PARTS INFORMATION 3)
  >> If Active Filter Module is abnormal, replace it.

OK

► If the symptom does not change by above Check 3, replace Main PCB.
## Trouble shooting 38

### Forecast of Cause:
1. Setting/Connection failure
2. External cause
3. Electrical Component defective

### Check Point 1: Check indoor and outdoor installation condition

- Indoor Unit - Check incorrect wiring between Indoor Unit - Remote Control, or terminals between Indoor Units. Or, check if there is an open cable connection.
- Are these Indoor Unit, Outdoor Unit, and Remote Control suitable model numbers to connect?

> **If there is some abnormal condition, correct it by referring to Installation manual and Data & Technical Manual.**

### Check Point 2: Check external cause at Indoor and Outdoor (Voltage drop or Noise)

- Instant drop ----- Check if there is a large load electric apparatus in the same circuit.
- Momentary power failure ----- Check if there is a defective contact or leak current in the power supply circuit.
- Noise ----- Check if there is any equipment causing harmonic wave near electric line.
  - (Neon bulb or electric equipment that may cause harmonic wave)
  - Check the complete insulation of grounding.

### Check Point 3: Check Electrical Components at Indoor and Outdoor

- Check Voltage at CN10 of Control PCB. < Power supply to Remote Control > (AS)
  > **If it is DC12V, Remote Control is failure. (Control PCB is normal)**  >> Replace Remote Control
  > **If it is DC 0V, Control PCB is failure.**  (Check Remote Control once again)  >> Replace Control PCB
  > **If the symptom does not change by above Check 1, 2, 3, replace Main PCB of Outdoor unit.**

- Check Voltage at CN17 of Control PCB. < Power supply to Remote Control > (AR)
  > **If it is DC12V, Remote Control is failure. (Control PCB is normal)**  >> Replace Remote Control
  > **If it is DC 0V, Control PCB is failure.**  (Check Remote Control once again)  >> Replace Control PCB
  > **If the symptom does not change by above Check 1, 2, 3, replace Main PCB of Outdoor unit.**

- Check Voltage at CN14 of Power PCB. < Power supply to Remote Control > (AU)
  > **If it is DC12V, Remote Control is failure. (Power PCB is normal)**  >> Replace Remote Control
  > **If it is DC 0V, Power PCB is failure.**  (Check Remote Control once again)  >> Replace Power PCB
  > **If the symptom does not change by above Check 1, 2, 3, replace Main PCB of Outdoor unit.**
### Trouble shooting 39

No Cooling / No Heating

#### Forecast of Cause:
1. Indoor Unit error
2. Outdoor Unit error
3. Effect by Surrounding environment
4. Connection Pipe / Connection Wire failure
5. Refrigeration cycle failure

#### Check Point 1: Check Indoor Unit
- Does Indoor Unit FAN run on HIGH FAN?
- Is Air Filter dirty?
- Is Heat Exchanger clogged?
- Check if Energy save function is operated.

![Check Point 1 Diagram](image)

OK

#### Check Point 2: Check Outdoor Unit Operation
- Check if Outdoor Unit is operating (If not, refer to Trouble shooting 30)
- Check any objects that obstruct the air flow route.
- Check clogged Heat Exchanger.
- Is the Valve open?

![Check Point 2 Diagram](image)

OK

#### Check Point 3: Check Site Condition
- Is capacity of Indoor Unit fitted to Room size?
- Any windows open? Or direct sunlight?

![Check Point 3 Diagram](image)

OK

#### Check Point 4: Check Indoor/Outdoor Installation Condition
- Check connection pipe (specified pipe length & Pipe diameter?)
- Check any loose or removed communication line.

**Attention:**

Strainer normally does not have temperature difference between inlet and outlet as shown in ①, but if there is a difference like shown in ②, there is a possibility of inside clogged. In this case, replace Strainer.

**Diagram:**

1. **Pipe (In)** → **Pipe (Out)**
2. **Pipe (In)** → **Pipe (Out)**

**Attention:**

If there is an abnormal condition, correct it by referring to Installation Manual or Data & Technical Manual.

![Diagram](image)

OK

#### Check Point 5: Check Refrigeration Cycle
- Check if Strainer is clogged (Refer to the figure at right).
- Measure Gas Pressure and if there is a leakage, correct it.

**Attention:**

When recharging the refrigerant, make sure to perform vacuuming, and recharge the specified amount.

- Check EEV (PARTS INFORMATION 4)
- Check Compressor (PARTS INFORMATION 1,2)
**Trouble shooting 40**

Abnormal Noise

**Forecast of Cause:**
1. Abnormal installation (Indoor/Outdoor)
2. Fan failure (Indoor/Outdoor)
3. Compressor failure (Outdoor)

**Forecast of Cause:**
- Abnormal noise is coming from Indoor Unit.
- Abnormal noise is coming from Outdoor Unit.

- Is Main Unit installed in stable condition?
- Is Fan Guard installed normally?
- Is Fan broken or deformed?
- Is the screw of Fan loose?
- Is there any object which obstruct the Fan rotation?
- Is Fan rotating?

**Diagnosis method when Abnormal Noise is occurred**

OK

- Check if vibration noise by loose bolt or contact noise of piping is happening.
- Is Compressor locked?

>> Check Compressor (PARTS INFORMATION 1,2)

---

**Trouble shooting 41**

Water Leaking

**Forecast of Cause:**
1. Erroneous installation
2. Drain hose failure

**Diagnosis method when water leak occurs**

OK

- Is Main Unit installed in stable condition?
- Is Main Unit broken or deformed at the time of transportation or maintenance?
- Is Drain Hose connection loose?
- Is there a trap in Drain Hose?
- Is Drain Hose clogged?

**Diagnosis method when water is spitting out.**

OK

- Is the filter clogged?
- Check Gas Pressure and correct it if there was a gas leak.
Compressor

Diagnosis method of Compressor (If Outdoor Unit LED displays Error, refer to Trouble shooting)

- Does not start up
  - Is there open or loose connection cable?
  - Check Filter PCB, Main PCB, connection of Compressor, and winding resistance. (Refer to the next page).
  - If there is no failure, the defect of Compressor is considered (Locked compressor due to clogged dirt or less oil)
  - Replace Compressor

- Stops soon after starting up
  - Is there open or loose connection cable?
  - Is Gas Pipe Valve open? (Low Pressure is too low)
  - Check if Refrigerant is leaking. (Recharge Refrigerant)
  - Check if Strainer is clogged. (PARTS INFORMATION 4)
  - If there is no failure, the defect of Compressor can be considered. (Compression part broken or valve defective)
  - Replace Compressor

- Abnormal noise
  - Check if vibration noise by loose bolt or contact noise of piping is happening.
  - Defective Compressor can be considered. (due to inside dirt clogging or broken component)
  - Replace Compressor
Check Point 1 : Check Connection

- Check terminal connection of Compressor (loose or incorrect wiring)
- Check connection of Main PCB (Loose or incorrect wiring)

Terminal cover opened

Check Point 2 : Check Winding Resistance

- Check winding resistance of each terminal
  ➤ If the resistance value is 0Ω or infinite, replace Compressor.

Resistance Value : 0.88 Ω at 68°F (20°C)

Check Point 3 : Replace Main PCB

➤ If the symptom does not change with above Check 1, 2, replace Main PCB.
Check Point 1 : Check Open or Short-circuit and Diode (D1)
- Remove connector, check the open or short-circuit and the diode in the module

![Diagram of Active Filter Module]

Check the open or short-circuit

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Resistance value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+)</td>
<td>(-)</td>
</tr>
<tr>
<td>(-)</td>
<td>N1</td>
</tr>
<tr>
<td>P</td>
<td>(+)</td>
</tr>
<tr>
<td>L1</td>
<td>L2</td>
</tr>
<tr>
<td>P</td>
<td>N1</td>
</tr>
<tr>
<td>L1,L2</td>
<td>Control Box</td>
</tr>
<tr>
<td>L2</td>
<td>N2</td>
</tr>
</tbody>
</table>

Check the diode

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Resistance value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2</td>
<td>P</td>
</tr>
<tr>
<td>P</td>
<td>L2</td>
</tr>
</tbody>
</table>

If it is abnormal, replace ACTIVE FILTER MODULE

Check Point 2 : Check the Output DC voltage (between P and N1)
- Check the Output DC voltage (between P and N1) of compressor stopping and operating.
  - >> If the output voltage of compressor operating is less than the output voltage of compressor stopping, Active Filter Module is detective. >> Replace Active Filter Module
Check Point 1: Check Connections
- Check connection of connector
  (Loose connector or open cable)

Check Point 2: Check Coil of EEV
- Remove connector, check each winding resistance of Coil.

<table>
<thead>
<tr>
<th>Read wire</th>
<th>Resistance value</th>
</tr>
</thead>
<tbody>
<tr>
<td>White - Red</td>
<td></td>
</tr>
<tr>
<td>Yellow - Brown</td>
<td>46Ω ± 4Ω at 68°F(20°C)</td>
</tr>
<tr>
<td>Orange - Red</td>
<td></td>
</tr>
<tr>
<td>Blue - Brown</td>
<td></td>
</tr>
</tbody>
</table>

- If Resistance value is abnormal, replace EEV.

Check Point 3: Check Voltage from Main PCB.
- Remove Connector and check Voltage (DC12V)
  - If it does not appear, replace Main PCB.

Check Point 4: Check Noise at start up
- Turn on Power and check operation noise.
  - If an abnormal noise does not show, replace Main PCB.
Check Point 5: Check Opening and Closing Operation of Valve

When Valve is closed, it has a temp. difference between Inlet and Outlet.

**CLOSE**
Example: Hot Gas

Pipe (In) Hi TEMP.

Pipe (Out) Normal TEMP.

If it is open, it has no temp. difference between Inlet and Outlet.

**OPEN**
Example: Hot Gas

Pipe (In) Hi TEMP.

Pipe (Out) Hi TEMP.

Check Point 6: Check Strainer

Strainer normally does not have temperature difference between inlet and outlet as shown in ①, but if there is a difference as shown in ②, there is a possibility of inside clogged. In this case, replace Strainer.

① Pipe (In) Pipe (Out)

② Pipe (In) Pipe (Out)
WALL MOUNTED / DUCT / CASSETTE type INVERTER (MULTI)

3. REPLACEMENT PARTS
REPLACEMENT PARTS

Models:
ASU9RMLQ
ASU12RMLQ
ASU18RMLQ
Models:
ASU9RMLQ
ASU12RMLQ
ASU18RMLQ
Model:
ARU9RML
Model:
ARU9RML
Models:
ARU12RML
ARU18RML
Models:
ARU12RML
ARU18RML
REPLACEMENT PARTS

Models:
ARU9RML
ARU12RML
ARU18RML
REPLACEMENT PARTS

Models: AUU9RML
AUU12RML
AUU18RML
REPLACEMENT PARTS

Models: AUU9RML
        AUU12RML
        AUU18RML

CONTROL UNIT
CASSETTE TYPE
DECORATION PANEL
UTG-UFUB-W
Flap total assy
Motor holder assy

REPLACEMENT PARTS

(connector : white)

(connector : red)
Model: AOU24RML
AOU24RML1
Model: AOU24RML
AOU24RML1
Model: AOU24RML
AOU24RML1

REPLACEMENT PARTS
Model : AOU36RML
AOU36RML1
Model: AOU36RML
AOU36RML1
Model: AOU36RML
AOU36RML1
REPLACEMENT PARTS

Model: AOU36RML
AOU36RML1

Connector: BLACK
GREEN
BLUE
RED
YELLOW

Connector: RED
WHITE
MODEL : AOU24RML

PROCESS
Assemble PWB ASSY
(FILTER PCB)

REGULATION
As shown in Fig.1, assemble PWB ASSY to INVERTER BOX A. As shown in Fig.2, pull out the wires of PWB ASSY. Don't sandwich ARRESTER (SA100) between PWB and INVERTER BOX A.
MODEL : AOU24RML

PROCESS  Assemble PCB ASSY
(MAIN PWB)

USED PARTS
① INVERTER BOX A
② MAIN PCB
③ SCREW, TAPPING

REGULATIONS
Certainly set PWB ASSY under the 3 hooks of INVERTER BOX A.
Before it is temporary fix of PCB ASSY, As shown in the Fig.2-5, pull out the wires of PCB ASSY.
After it is temporary fix of PCB ASSY, As shown in the Fig.6-10, pull out the wires of PCB ASSY.
Don't forget to take a cushion D101(DIODE BRIDGE).
Don't bend foot D101(DIODE BRIDGE).

W12 YELLOW, W13 BLUE
(MAIN PWB)
WIRE WITH TERMINAL

Don't forget to take a cushion.
Don't bend foot.
MODEL : AOU24RML
REGULATIONS
As shown in Fig.2, pull out the wires.

Fig.2
②MAIN PCB
Through this hole.
W12 YELLOW, W13 BLUE (MAIN PCB) WIRE WITH TERMINAL
W10 BLACK, W11 WHITE (MAIN PCB) WIRE WITH TERMINAL
② INVERTER BOX A
Through this hole.
MODEL : AOU24RML

REGULATIONS

As shown in Fig.3, pull out the wires.
MODEL: AOU24RML
REGULATIONS
As shown in Fig.4-5, pull out the wires.

Through this hole.

Fig.4

Fig.5
MODEL : AOU24RML

REGULATIONS
As shown in Fig.6, pull out the wires.
As shown in the Fig.7, pull out the wires and fix them.

W303 BLACK, W304 WHITE, W305 RED (MAIN PCB) WIRE WITH TERMINAL

W16 RED (MAIN PCB) WIRE WITH TERMINAL

W17 BLACK (MAIN PCB) WIRE WITH TERMINAL

CN407 (MAIN PCB) WIRE WITH CONNECTOR

HEATSINK THERMISTOR

W12 YELLOW, W13 BLUE (MAIN PCB) WIRE WITH TERMINAL

500mm or more

W17 BLACK (MAIN PCB) WIRE WITH TERMINAL

W16 RED (MAIN PCB) WIRE WITH TERMINAL

W303 BLACK, W304 WHITE, W305 RED (MAIN PCB) WIRE WITH CONNECTOR

HEATSINK THERMISTOR

CN407 (MAIN PCB) WIRE WITH CONNECTOR

Fig.6

Fig.7
MODEL: AOU24RML
REGULATIONS

As shown in Fig.8, pull out the wires.
MODEL : AOU24RML

REGULATIONS
As shown in Fig.9-10, pull out the wires.
MODEL: AOU24RML  
PROCESS: Assemble WIRE WITH TERMINAL (ACTL, etc)  
USED PARTS:  

REGULATIONS  
As shown in Fig.1 assemble WIRE WITH TERMINAL to INVERTER BOX A.
MODEL: AOU24RML

PROCESS  Connect wires. (INVERTER BOX A)

USED PARTS

1 EMI FILTER

2 BINDER C

REGULATIONS

As shown in Fig1-2, assemble EMI FILTER. Turn of the wire is according as Fig.1. As shown in Fig.2, certainly fix EMI FILTER to wires by BINDER.

W8 BLACK, W9 WHITE (FILTER PCB)

Fig.1

Certainly fix EMI FILTER to wires by BINDER.

Fig.2

2 Turn the WIRE this way

Example of number of turns of cores

1 turn

2 turns

70 ± 10mm
REPLACEMENT PARTS

MODEL : AOU24RML

REGULATIONS
As shown in Fig.3, connect wires.

CN34
(from W8 BLACK, W9 WHITE of FILTER PCB)
YELLOW

Fig.3
MODEL : AOU24RML

REGULATIONS
As shown in Fig.4-5, connect wires. PWB must not warp when you connect CN1.

Fig.4
CN1 (from CN1 of MAIN PCB) WHITE

Fig.5
TM101 WIRE WITH TERMINAL BLACK LINE (from W10 of MAIN PCB)
TM102 WIRE WITH TERMINAL WHITE LINE (from W11 of MAIN PCB)
Through this hole.
MODEL: AOU24RML

PROCESS  Fix the wires to INVERTER BOX A
          (HEATSINK THERMISTOR, etc)

REGULATIONS
As shown in Fig.1, fix the wires to INVERTER BOX A.

Fig.1
Fig.2
MODEL: AOU24RML
REGULATIONS
As shown in Fig.2, fix the wires to INVERTER BOX A.

Pull out the wire through this opening.

Fig.2

HEATSINK THERMISTOR
CN407(MAIN PCB)
WIRE WITH CONNECTOR
MODEL : AOU24RML
REGULATIONS
Tighten screw as shown in figure.

Check no miss tightening!
Check no float of parts!

SCREW WITH WASHER
SCREW, TAPPING for temporarily fixing
SCREW WITH WASHER
DB D101
DIPIPM IC310
SCREW, TAPPING

Fig.1
MODEL: AOU24RML

PROCESS

Bind WIRE WITH CONNECTOR (COMP WIRE)

USED PARTS

REGULATIONS

As shown in the figures, set WIRE WITH CONNECTOR and bind it to INVERTER BOX A. The wire must not come in contact with the HOLDER(THERMO) SUS304 CSP-H T0.5.
MODEL: AOU24RML

PROCESS
Connect wires.
(D,PWR(BRIDGE), ACTPM)

USED PARTS
①EMI FILTER
②BINDER C

REGULATIONS
As shown in figures, assemble EMI FILTER. Turn of the wire is according as Fig.3.
As shown in Fig.2, certainly fix EMI FILTER to wires by BINDER.

Fig.1
①EMI FILTER  ②BINDER C
110 ± 10mm
W12 YELLOW, W13 BLUE (MAIN PWB)
WIRE WITH TERMINAL

Fig.2
①EMI FILTER
W12 YELLOW, W13 BLUE (MAIN PWB)
WIRE WITH TERMINAL
Certainly fix EMI FILTER to wires by BINDER.

Fig.3
②BINDER C
2 Turn the WIRE this way
MODEL : AOU24RML

REGULATIONS
As shown in Fig.4, connect wires.

- **WIRE WITH TERMINAL WHITE**
- **Twist 4 times or more.**
- **W17 BLACK (MAIN PCB) WIRE WITH TERMINAL**
- **W16 RED (MAIN PCB) WIRE WITH TERMINAL**
- **CN407 (MAIN PCB) WIRE WITH CONNECTOR**
- **W12 YELLOW, W13 BLUE (MAIN PCB) WIRE WITH TERMINAL**
- **L2 BROWN**
- **L1 WHITE**
- **+ RED**
- **- BLACK**
- **N1 BLUE**
- **P YELLOW**

Fig.4
MODEL : AOU24RML

REGULATIONS
As shown in Fig.5, bind 3 types of wires.

Bind 3 types of wires!
(W12 YELLOW, W13 BLUE, CN407)

WIRE WITH TERMINAL (CN407, MAIN PWB) must not come in contact with the screw.

W12 YELLOW, W13 BLUE (MAIN PWB) WIRE WITH TERMINAL

CN407 (MAIN PCB) WIRE WITH CONNECTOR

50 ± 10mm

② BINDER C
MODEL: AOU24RML
PROCESS: Connect wires. (TERMINAL)

REGULATIONS
As shown in figures, connect wires. A right picture shows the example of two times of the twist.

Twist W4 and W5 2 times or more.

W5 WHITE (FILTER PWB) WIRE WITH TERMINAL
W4 BLACK (FILTER PWB) WIRE WITH TERMINAL

Fig.1
MODEL: AOU24RML

PROCESS
Connect wires.
(PCB ASSY(MAIN), INVERTER BOX D)

REGULATIONS
As shown in figures, connect wires.

![Diagram with wires highlighted: W200 RED (MAIN PCB) Wire with Terminal, W201 YELLOW (MAIN PCB) Wire with Terminal]
MODEL : AOU24RML
PROCESS  Bind wires.

REGULATIONS
As shown in figures, bind 4 types of wires.

Bind 4 types of wires!
(W200,W201,W8,W9,CN1)

Fig.1

CN1 (MAIN PCB)
WIRE WITH CONNECTOR

W201 YELLOW (MAIN PCB)
WIRE WITH TERMINAL

W200 RED (MAIN PCB)
WIRE WITH TERMINAL

Fig.2
MODEL: AOU36RML

PROCESS
Assemble PWB ASSY
(FILTER PCB)

REGULATION
As shown in Fig.1, assemble PWB ASSY to INVERTER BOX A.
As shown in Fig.2, pull out the wires of PWB ASSY.
Don't sandwich ARRESTER (SA100) between PWB and INVERTER BOX A.

Don't sandwich ARRESTER between PWB and INVERTER BOX A.

Pull out the wires of PWB ASSY this way.
MODEL : AOU36RML

PROCESS
Assemble PCB ASSY.
MAIN PCB

USED
PARTS
① INVERTER BOX A
② MAIN PCB
③ SCREW, TAPPING

REGULATIONS
Certainly set PWB ASSY under the 3 hooks of INVERTER BOX A.
Before it is temporary fix of PWB ASSY, As shown in the Fig.3-6, pull out the wires of PWB ASSY.
After it is temporary fix of PWB ASSY, As shown in the Fig.7-11, pull out the wires of PWB ASSY.
Don't forget to take a cushion D101 (DIODE BRIDGE).
Don't bend foot D101 (DIODE BRIDGE).
MODEL : AOU36RML

REGULATIONS
As shown in Fig.2, Twist W21 and W22 10 times or more.
A right picture shows the example of two times of the twist.

Fig.2

W21 ORANGE, W22 ORANGE (MAIN PCB) WIRE WITH TERMINAL

Twist W21 and W22 10 times or more.
MODEL : AOU36RML
REGULATIONS

As shown in Fig.3, pull out the wires.

W12 YELLOW, W13 BLUE (MAIN PCB) WIRE WITH TERMINAL

W10 BLACK, W11 WHITE (MAIN PCB) WIRE WITH TERMINAL

W21 ORANGE, W22 ORANGE (MAIN PCB) WIRE WITH TERMINAL

Through this hole.

INVERTER BOX A

MAIN PCB
MODEL : AOU36RML

REGULATIONS
As shown in Fig.4, pull out the wires.
MODEL : AOU36RML
REGULATIONS
As shown in Fig.5-6, pull out the wires.
MODEL : AOU36RML

REGULATIONS
As shown in Fig.7, pull out the wires.
As shown in the Fig.8, pull out the wires and fix them.

W303 BLACK, W304 WHITE, W305 RED (MAIN PCB) WIRE WITH TERMINAL

W17 BLACK (MAIN PCB) WIRE WITH TERMINAL

CN407 (MAIN PCB) WIRE WITH CONNECTOR

HEATSINK THERMISTOR

W12 YELLOW, W13 BLUE (MAIN PCB) WIRE WITH TERMINAL

Fix the wires to these hooks.

500mm or more

W16 RED (MAIN PCB) WIRE WITH TERMINAL

W16 RED (MAIN PWB) WIRE WITH TERMINAL

W303 BLACK, W304 WHITE, W305 RED (MAIN PWB) WIRE WITH CONNECTOR

HEATSINK THERMISTOR

CN407 (MAIN PCB) WIRE WITH CONNECTOR
REPLACEMENT PARTS

MODEL : AOU36RML
REGULATIONS
As shown in Fig.9, pull out the wires.
MODEL : AOU36RML
REGULATIONS
As shown in Fig.10-11, pull out the wires.
MODEL: AOU36RML

PROCESS  Assemble WIRE WITH TERMINAL (ACTL, etc)  USED  ① WIRE WITH TERMINAL PARTS

REGULATIONS

As shown in Fig.1 assemble WIRE WITH TERMINAL to INVERTER BOX A.

Fig.1

Fig.2

Fig.3
MODEL : AOU36RML
PROCESS  Connect wires. (INVERTER BOX A)  USED PARTS  EMI FILTER  BINDER C

REGULATIONS
As shown in Fig1-2, assemble EMI FILTER. Turn of the wire is according as Fig.1.
As shown in Fig.2, certainly fix EMI FILTER to wires by BINDER.

Example of number of turns of cores

W8 BLACK, W9 WHITE (FILTER PCB)

Certainly fix EMI FILTER to wires by BINDER.
MODEL : AOU36RML
REGULATIONS
As shown in Fig.3, connect wires.

CN34
(from W8 BLACK, W9 WHITE of FILTER PCB)
YELLOW
MODEL: AOU36RML
REGULATIONS
As shown in Fig.4-5, connect wires. PCB must not warp when you connect CN1.
MODEL : AOU36RML

PROCESS  Fix the wires to INVERTER BOX A
      (HEATSINK THERMISTOR, etc)

REGULATIONS
As shown in Fig.1 fix the wires to INVERTER BOX A.
MODEL : AOU36RML
REGULATIONS
As shown in Fig.2, fix the wires to INVERTER BOX A.

Fig.2

Pull out the wire through this opening.

Hook

HEATSINK THERMISTOR

CN407(MAIN PCB) WIRE WITH CONNECTOR
REPLACEMENT PARTS

MODEL: AOU36RML
REGULATIONS
Tighten screw as shown in figure.

Check no miss tightening
Check no float of parts

SCREW WITH WASHER

DB
D101

DIPIPIM
IC310

SCREW WITH WASHER

SCREW, TAPPING for temporarily fixing

SCREW, TAPPING
MODEL: AOU36RML

PROCESS
- Bind WIRE WITH CONNECTOR. (COMP WIRE)

USED PARTS
- ① BINDER C

REGULATIONS
As shown in the figures, set WIRE WITH CONNECTOR and bind it to INVERTER BOX A. The wire must not come in contact with the HOLDER (THERMO) SUS304 CSP-H T0.5.
REPLACEMENT PARTS

MODEL : AOU36RML
PROCESS Connect wires.
D,PWR(BRIDGE), ACTPM
USED PARTS
①EMI FILTER
②BINDER C

REGULATIONS
As shown in figures, assemble EMI FILTER. Turn of the wire is according as Fig.3. As shown in Fig.2, certainly fix EMI FILTER to wires by BINDER.
MODEL : AOU36RML

REGULATIONS

As shown in Fig.4, connect wires.

Twist 4 times or more.
MODEL : AOU36RML
REGULATIONS
As shown in Fig.5 bind 3 types of wires

Bind 3 types of wires!
(W12 YELLOW, W13 BLUE, CN407)

WIRE WITH TERMINAL (CN407, MAIN PCB)
must not come in contact with the screw.
MODEL : AOU36RML
PROCESS  Connect wires. (TERMINAL)

REGULATIONS
As shown in figures, connect wires.
A right picture shows the example of two times of the twist.

Twist W4 and W5 2 times or more.

W5 WHITE (FILTER PWB) WIRE WITH TERMINAL
W4 BLACK (FILTER PWB) WIRE WITH TERMINAL
MODEL: AOU36RML

PROCESS

Connect wires.
(PWB ASSY(MAIN), INVERTER BOX D)

REGULATIONS

As shown in figures, connect wires.

Fig.1

- W200 RED (MAIN PCB) WIRE WITH TERMINAL
- W201 YELLOW (MAIN PCB) WIRE WITH TERMINAL
- W202 PINK (MAIN PCB) WIRE WITH TERMINAL
- W203 BROWN (MAIN PCB) WIRE WITH TERMINAL
MODEL: AOU36RML

PROCESS: Bind wires.

USED ① BINDER C PARTS

REGULATIONS
As shown in figures, bind 6 types of wires.

Bind 6 types of wires!
(W200~W203, W8, W9, CN1)

Fig. 1

① BINDER C

WIRE WITH CONNECTOR

CN1 (MAIN PCB)

① BINDER C

WIRE WITH TERMINAL

W201 YELLOW (MAIN PCB)

WIRE WITH TERMINAL

W203 BROWN (MAIN PCB)

WIRE WITH TERMINAL

W202 PINK (MAIN PCB)

WIRE WITH TERMINAL

W200 RED (MAIN PCB)

WIRE WITH TERMINAL

Fig. 2

W8 BLACK, W9 WHITE
(FILTER PCB)
WIRE WITH CONNECTOR

Close up
WALL MOUNTED / DUCT / CASSETTE type INVERTER (MULTI)

4. APPENDING DATA

1. PT CHART
### 1. PT CHART

**MODEL NAME : ASU12RMLQ+ASU12RMLQ+ASU12RMLQ / AOU36RML**

#### COOLING

<table>
<thead>
<tr>
<th>Outdoor Temperature Dry Bulb (°F)</th>
<th>70</th>
<th>82</th>
<th>95</th>
<th>110</th>
<th>115</th>
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<th>125</th>
<th>130</th>
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<td>12.8</td>
<td>17.7</td>
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<td>10.1</td>
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<td>551</td>
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*120~130F : Out of operation range. No warranty*

#### HEATING

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*Blank : Because operation is not same, data are omitted by defrost operation and heating overload protection*

**MODEL NAME : ASU9RMLQ+ASU9RMLQ+ASU9RMLQ / AOU36RML**

#### COOLING

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<tr>
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<td>11.2</td>
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*120~130F : Out of operation range. No warranty*

#### HEATING

<table>
<thead>
<tr>
<th>Outdoor Temperature Dry Bulb (°F)</th>
<th>17</th>
<th>35</th>
<th>47</th>
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<tbody>
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*Blank : Because operation is not same, data are omitted by defrost operation and heating overload protection*
**MODEL NAME: ASU12RMLQ+ASU12RMLQ+ASU9RMLQ / AOU36RML**

### COOLING

<table>
<thead>
<tr>
<th>Indoor Temperature Dry / Wet Bulb (°F)</th>
<th>CAPACITY (BTU)</th>
<th>INPUT (W)</th>
<th>AMPS (A)</th>
<th>HI PR (PSI)</th>
<th>LO PR (PSI)</th>
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<tbody>
<tr>
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<td>80/67</td>
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<td>90/73</td>
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### HEATING

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<th>Indoor Temperature Dry / Wet Bulb (°F)</th>
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<th>LO PR (PSI)</th>
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*Blank: Because operation is not same, data are omitted by defrost operation and heating overload protection*
## MODEL NAME: ASU18RMLQ+ASU9RMLQ+ASU9RMLQ / AOU36RML

### COOLING

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<th>Outdoor Temperature Dry Bulb (°F)</th>
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*120~130°F : Out of operation range. No warranty

### HEATING

<table>
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<td><strong>LO PR (PSI)</strong></td>
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</table>

*Blank : Because operation is not same, data are omitted by defrost operation and heating overload protection

## MODEL NAME: ASU9RMLQ X4 / AOU36RML

### COOLING

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<tr>
<td><strong>LO PR (PSI)</strong></td>
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*120~130°F : Out of operation range. No warranty

### HEATING

<table>
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<tr>
<th>Outdoor Temperature Dry Bulb (°F)</th>
<th>17</th>
<th>35</th>
<th>47</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPACITY (BTU)</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>INPUT (W)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>AMPS (A)</strong></td>
<td></td>
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</tr>
<tr>
<td><strong>HI PR (PSI)</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>LO PR (PSI)</strong></td>
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</tr>
</tbody>
</table>

*Blank : Because operation is not same, data are omitted by defrost operation and heating overload protection