## TECHNICAL & SERVICE MANUAL

### R410A
Outdoor unit

<table>
<thead>
<tr>
<th>Model Names</th>
<th>Service Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUZ-KA25VA2</td>
<td>SUZ-KA25VA2.TH</td>
</tr>
<tr>
<td>SUZ-KA35VA2</td>
<td>SUZ-KA35VA2.TH</td>
</tr>
<tr>
<td>SUZ-KA50VA2</td>
<td>SUZ-KA50VA2.TH</td>
</tr>
<tr>
<td>SUZ-KA60VA2</td>
<td>SUZ-KA60VA2.TH</td>
</tr>
<tr>
<td>SUZ-KA71VA2</td>
<td>SUZ-KA71VA2.TH</td>
</tr>
</tbody>
</table>

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### PARTS CATALOG (OCB472)

**NOTE:**
This service manual describes technical data of the outdoor units.
RoHS compliant products have <G> mark on the spec name plate.
For servicing of RoHS compliant products, refer to the RoHS Parts List.
### 1-1. INDOOR UNIT SERVICE MANUAL

<table>
<thead>
<tr>
<th>Service Ref.</th>
<th>Service Manual No.</th>
<th>Outdoor unit Heat pump type</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLZ-KA35VA(L).TH</td>
<td></td>
<td>○</td>
</tr>
<tr>
<td>SLZ-KA50VA(L).TH</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>SEZ-KD25VA(L).TH</td>
<td>HWE0711</td>
<td>○</td>
</tr>
<tr>
<td>SEZ-KD35VA(L).TH</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>SEZ-KD50VA(L).TH</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>SEZ-KD60VA(L).TH</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>SEZ-KD71VA(L).TH</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>MFZ-KA25VA-E4</td>
<td>OB409</td>
<td>○</td>
</tr>
<tr>
<td>MFZ-KA35VA-E4</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>MFZ-KA50VA-E4</td>
<td></td>
<td>—</td>
</tr>
</tbody>
</table>

(Note) • Please refer to the service manual of indoor unit or the technical data book for the combination data.
### INFORMATION FOR THE AIR CONDITIONER WITH R410A REFRIGERANT

- This room air conditioner adopts an HFC refrigerant (R410A) which never destroys the ozone layer.
- Pay particular attention to the following points, though the basic installation procedure is same as that for R22 conditioners.
  1. As R410A has working pressure approximate 1.6 times as high as that of R22, some special tools and piping parts/materials are required. Refer to the table below.
  2. Take sufficient care not to allow water and other contaminations to enter the R410A refrigerant during storage and installation, since it is more susceptible to contaminations than R22.
  3. For refrigerant piping, use clean, pressure-proof parts/materials specifically designed for R410A. (Refer to 2. Refrigerant piping.)
  4. Composition change may occur in R410A since it is a mixed refrigerant. When charging, charge liquid refrigerant to prevent composition change.

#### Refrigerant

<table>
<thead>
<tr>
<th>Composition (Ratio)</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HFC-32: HFC-125 (50%:50%)</td>
<td>R22 (100%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refrigerant handling</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pseudo-azeotropic refrigerant</td>
<td></td>
<td>Single refrigerant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chlorine</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not included</td>
<td></td>
<td>Included</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety group (ASHRAE)</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1/A1</td>
<td></td>
<td>A1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Molecular weight</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.6</td>
<td>86.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling point (°C)</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>-51.4</td>
<td>-40.8</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Steam pressure [25°C] (Mpa)</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.557</td>
<td>0.94</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Saturated steam density [25°C] (Kg/m³)</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>44.4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Combustibility</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non combustible</td>
<td></td>
<td>Non combustible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ODP *1</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.055</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GWP *2</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1730</td>
<td>1700</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refrigerant charge method</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>From liquid phase in cylinder</td>
<td></td>
<td>Gas phase</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Additional charge on leakage</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible</td>
<td></td>
<td>Possible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Kind</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incompatible oil</td>
<td></td>
<td>Compatible oil</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>Light yellow</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Smell</th>
<th>New refrigerant</th>
<th>Previous refrigerant</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>None</td>
</tr>
</tbody>
</table>

*1: Ozone Depletion Potential : based on CFC-11
*2: Global Warming Potential : based on CO₂

#### NOTE

The unit of pressure has been changed to MPa on the international system of units (SI unit system).

The conversion factor is: 1 (MPa [Gauge]) = 10.2 (kgf/cm² [Gauge])
1. Tools dedicated for the air conditioner with R410A refrigerant

The following tools are required for R410A refrigerant. Some R22 tools can be substituted for R410A tools. The diameter of the service port on the stop valve in outdoor unit has been changed to prevent any other refrigerant being charged into the unit. Cap size has been changed from 7/16 UNF with 20 threads to 1/2 UNF with 20 threads.

<table>
<thead>
<tr>
<th>R410A tools</th>
<th>Can R22 tools be used?</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge manifold</td>
<td>No</td>
<td>R410A has high pressures beyond the measurement range of existing gauges. Port diameters have been changed to prevent any other refrigerant from being charged into the unit.</td>
</tr>
<tr>
<td>Charge hose</td>
<td>No</td>
<td>Hose material and cap size have been changed to improve the pressure resistance.</td>
</tr>
<tr>
<td>Gas leak detector</td>
<td>No</td>
<td>Dedicated for HFC refrigerant.</td>
</tr>
<tr>
<td>Torque wrench</td>
<td>Yes</td>
<td>6.35 mm and 9.52 mm</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>12.7 mm and 15.88 mm</td>
</tr>
<tr>
<td>Flare tool</td>
<td>Yes</td>
<td>Clamp bar hole has been enlarged to reinforce the spring strength in the tool.</td>
</tr>
<tr>
<td>Flare gauge</td>
<td>New</td>
<td>Provided for flaring work (to be used with R22 flare tool).</td>
</tr>
<tr>
<td>Vacuum pump adapter</td>
<td>New</td>
<td>Provided to prevent the back flow of oil. This adapter enables you to use vacuum pumps.</td>
</tr>
<tr>
<td>Electronic scale for refrigerant charging</td>
<td>New</td>
<td>It is difficult to measure R410A with a charging cylinder because the refrigerant bubbles due to high pressure and high-speed vaporization</td>
</tr>
</tbody>
</table>

No: Not substitutable for R410A  Yes: Substitutable for R410A

NOTE: The unit of pressure has been changed to MPa on the international system of units (SI unit system).

The conversion factor is: 1 (MPa [Gauge]) = 10.2 (kgf/cm² [Gauge])
2. Refrigerant piping

Specifications

Use the refrigerant pipes that meet the following specifications.

<table>
<thead>
<tr>
<th>Pipe</th>
<th>Outside diameter (mm)</th>
<th>Wall thickness (mm)</th>
<th>Insulation material</th>
</tr>
</thead>
<tbody>
<tr>
<td>For liquid</td>
<td>6.35</td>
<td>0.8</td>
<td>Heat resisting foam plastic</td>
</tr>
<tr>
<td></td>
<td>9.52</td>
<td>0.8</td>
<td>Specific gravity 0.045 Thickness</td>
</tr>
<tr>
<td>For gas</td>
<td>9.52</td>
<td>0.8</td>
<td>8 mm</td>
</tr>
<tr>
<td></td>
<td>12.7</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.88</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

• Use a copper pipe or a copper-alloy seamless pipe with a thickness of 0.8 mm. Never use any pipe with a thickness less than 0.8mm, as the pressure resistance is insufficient.

Flaring work and flare nut

Flaring work for R410A pipe differs from that for R22 pipe.

For details of flaring work, refer to Installation manual "FLARING WORK".

<table>
<thead>
<tr>
<th>Pipe diameter (mm)</th>
<th>Dimension of flare nut (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R410A</td>
</tr>
<tr>
<td>6.35</td>
<td>17</td>
</tr>
<tr>
<td>9.52</td>
<td>22</td>
</tr>
<tr>
<td>12.7</td>
<td>26</td>
</tr>
<tr>
<td>15.88</td>
<td>29</td>
</tr>
</tbody>
</table>

3. Refrigerant oil

Apply the special refrigerant oil (accessories: packed with indoor unit) to the flare and the union seat surfaces.

4. Air purge

• Do not discharge the refrigerant into the atmosphere.

Take care not to discharge refrigerant into the atmosphere during installation, reinstallation, or repairs to the refrigerant circuit.

• Use the vacuum pump for air purging for the purpose of environmental protection.

5. Additional charge

For additional charging, charge the refrigerant from liquid phase of the gas cylinder.

If the refrigerant is charged from the gas phase, composition change may occur in the refrigerant inside the cylinder and the outdoor unit. In this case, ability of the refrigerating cycle decreases or normal operation can be impossible. However, charging the liquid refrigerant all at once may cause the compressor to be locked. Thus, charge the refrigerant slowly.
### 3 PART NAMES AND FUNCTIONS

**SUZ-KA25VA2.TH  SUZ-KA35VA2.TH**

- **Air inlet** (back and side)
- **Drain outlet**
- **Piping**
- **Drain hose**
- **Air outlet**

**SUZ-KA50VA2.TH  SUZ-KA60VA2.TH**

- **Air inlet** (back and side)
- **Drain hose**
- **Piping**
- **Air outlet**

**SUZ-KA71VA2.TH**

- **Air inlet** (back and side)
- **Piping**
- **Drain hose**
- **Air outlet**

### Table of Parts

<table>
<thead>
<tr>
<th>Model</th>
<th>SUZ-KA25/35VA2.TH</th>
<th>SUZ-KA50/60VA2.TH</th>
<th>SUZ-KA71VA2.TH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Drain socket</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 Drain cap</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>
### SPECIFICATION

<table>
<thead>
<tr>
<th>Function</th>
<th>Outdoor Service Ref.</th>
<th>SUZ-KA25VA2.TH</th>
<th>SUZ-KA35VA2.TH</th>
<th>SUZ-KA50VA2.TH</th>
<th>SUZ-KA60VA2.TH</th>
<th>SUZ-KA71VA2.TH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting current</td>
<td></td>
<td>A</td>
<td>3.65</td>
<td>4.75</td>
<td>6.75</td>
<td>9.75</td>
</tr>
<tr>
<td>Compressor motor current</td>
<td></td>
<td>A</td>
<td>2.74</td>
<td>3.37</td>
<td>4.22</td>
<td>4.42</td>
</tr>
<tr>
<td>Fan motor current</td>
<td></td>
<td>A</td>
<td>0.31</td>
<td>0.28</td>
<td>0.33</td>
<td>0.33</td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td>KBN073FFDH(C)</td>
<td>KBN092FFAH(C)</td>
<td>SNB130FGBH(T)</td>
<td>SNB130FGBH(T)</td>
<td>SNB172FEKMT</td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td>W</td>
<td>550</td>
<td>650</td>
<td>900</td>
<td>900</td>
</tr>
<tr>
<td>Winding resistance (at 20°C)</td>
<td></td>
<td>Ω</td>
<td>U-V 1.70</td>
<td>U-W 1.70</td>
<td>U-V 1.91</td>
<td>U-W 1.91</td>
</tr>
<tr>
<td>Fan motor</td>
<td></td>
<td>Model</td>
<td>RC0J50-DB</td>
<td>RC0J50-DB</td>
<td>RC0J60-AA</td>
<td>RC0J60-AA</td>
</tr>
<tr>
<td>Winding resistance (at 20°C)</td>
<td></td>
<td>Ω</td>
<td>WHT-BLK 37.0</td>
<td>WHT-BLK 37.0</td>
<td>WHT-BLK 15.2</td>
<td>WHT-BLK 15.2</td>
</tr>
<tr>
<td>Air flow (High/Low%)</td>
<td></td>
<td>m³/h</td>
<td>2.058</td>
<td>1.938</td>
<td>2.004</td>
<td>2.940</td>
</tr>
<tr>
<td>Weight</td>
<td></td>
<td>kg</td>
<td>30</td>
<td>33</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td>Sound level</td>
<td></td>
<td>dB</td>
<td>46</td>
<td>47</td>
<td>48</td>
<td>53/51*</td>
</tr>
<tr>
<td>Special remarks</td>
<td></td>
<td>Refrigerant filling capacity (R410A)</td>
<td></td>
<td>kg</td>
<td>0.60</td>
<td>1.05</td>
</tr>
<tr>
<td>Refrigerating oil (Model)</td>
<td></td>
<td>cc</td>
<td>320 (NEO22)</td>
<td>320 (NEO22)</td>
<td>450 (NEO22)</td>
<td>450 (NEO22)</td>
</tr>
</tbody>
</table>

**NOTE:** Test conditions are based on ISO 5151

- Cooling: Indoor D.B. 27°C W.B. 19°C
- Outdoor D.B. 35°C W.B. 24°C
- Heating: Indoor D.B. 20°C W.B. 15°C
- Outdoor D.B. 7°C W.B. 6°C
- Refrigerant piping length (one way): 5m

*1 Measured under rated operating frequency.

* Reference value
## Specifications and rating conditions of main electric parts

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>SUZ-KA25VA2.TH</th>
<th>SUZ-KA35VA2.TH</th>
<th>SUZ-KA50VA2.TH</th>
<th>SUZ-KA60VA2.TH</th>
<th>SUZ-KA71VA2.TH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current transformer</strong></td>
<td>(CT) 20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CT1, 2) --</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CT61) --</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CT761, CT781) 15A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Smoothing capacitor</strong></td>
<td>(C61) -- 620μF 420V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(C62, C63) 620μF 420V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(CB1, 2, 3) --</td>
<td>560μF 450V</td>
<td>560μF 350V</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Diode module</strong></td>
<td>(DB61) 15A 600V</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(DB65) 25A 600V</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Fuse</strong></td>
<td>(F61) T20A L250V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(F62) -- 250V 2A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(F63) --</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(F701, F801, F901) T3.15A L250V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(F911) 250V 1A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intelligent power module</strong></td>
<td>(IPM) 15A 600V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(HC930) --</td>
<td>3A 450V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(IC932) --</td>
<td>5A 600V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power factor controller</strong></td>
<td>(PFC) --</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expansion valve coil</strong></td>
<td>(LEV) DC12V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High pressure switch</strong></td>
<td>(HPS) -- ACB-DB156 (for R2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reactor</strong></td>
<td>(L61) 23mH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(L) 340μH 20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current-detecting resistor</strong></td>
<td>(R61) 45mΩ 5W (1 element)</td>
<td>100mΩ 5W (2 elements)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(R61, R62) --</td>
<td>180mΩ 5W (2 elements)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(R64A, R64B) --</td>
<td>10Ω 10W</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(R825) 25mΩ 5W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(R937, R938, R939) 430mΩ 2W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(R937A, R937B) 1.1Ω 2W</td>
<td>1.1Ω 2W 2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Resistor</strong></td>
<td>(RS1-4) 0.04Ω 7W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current-Limiting PTC thermistor</strong></td>
<td>(PTC64, PTC65) 33Ω</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Terminal block</strong></td>
<td>(TB1, TB2) 3P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relay</strong></td>
<td>(X63) 3A 250V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(X64) 20A 250V</td>
<td>20A 250V</td>
<td>20A 250V</td>
<td>20A 250V</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(X601) --</td>
<td>3A 250V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(X602) --</td>
<td>3A 250V</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Solenoid coil relay</strong></td>
<td>(SSR61) --</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>R.V. coil</strong></td>
<td>(21S4) AC220-240V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IGBT</strong></td>
<td>(TR821) 30A 600V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**NOISE CRITERIA CURVES**

**SUZ-KA25VA2.TH**

**FAN SPEED** | **FUNCTION** | **SPL(dB(A))** | **LINE**
--- | --- | --- | ---
High | COOLING | 46 | ●
Med. | HEATING | 46 | ○

Test conditions,

Cooling: Dry-bulb temperature 35°C
Wet-bulb temperature (24°C)

Heating: Dry-bulb temperature 7°C
Wet-bulb temperature 6°C

**SUZ-KA35VA2.TH**

**FAN SPEED** | **FUNCTION** | **SPL(dB(A))** | **LINE**
--- | --- | --- | ---
High | COOLING | 47 | ●
Med. | HEATING | 48 | ○

Test conditions,

Cooling: Dry-bulb temperature 35°C
Wet-bulb temperature (24°C)

Heating: Dry-bulb temperature 7°C
Wet-bulb temperature 6°C

**SUZ-KA50VA2.TH**

**SUZ-KA60VA2.TH**

**FAN SPEED** | **FUNCTION** | **SPL(dB(A))** | **LINE**
--- | --- | --- | ---
High | COOLING | 53 | ●
Med. | HEATING | 55 | ○

Test conditions,

Cooling: Dry-bulb temperature 35°C
Wet-bulb temperature (24°C)

Heating: Dry-bulb temperature 7°C
Wet-bulb temperature 6°C

**SUZ-KA71VA2.TH**

**FAN SPEED** | **FUNCTION** | **SPL(dB(A))** | **LINE**
--- | --- | --- | ---
High | COOLING | 55 | ●
Med. | HEATING | 55 | ○

Test conditions,

Cooling: Dry-bulb temperature 35°C
Wet-bulb temperature (24°C)

Heating: Dry-bulb temperature 7°C
Wet-bulb temperature 6°C

---

Test conditions

Cooling: Dry-bulb temperature 35°C
Wet-bulb temperature 24°C

Heating: Dry-bulb temperature 7°C
Wet-bulb temperature 6°C

OUTDOOR UNIT

MICROPHONE

1 m
OUTLINES AND DIMENSIONS

SUZ-KA25VA2.TH  SUZ-KA35VA2.TH

REQUIRED SPACE

Basically open 100mm or more without any obstruction in front and on both sides of the unit.

Open two sides of left, right, or rear side.

Unit: mm

- Drain hole: 42
- Handle: 550
- Service panel: 285
- Service port: 344.5
- Liquid refrigerant pipe joint: 6.35
- Gas refrigerant pipe joint: 9.52

- 2-Oval holes 10×21
- Air in
- Air out
- Bolt pitch for installation: 500
- Bolt pitch for installation: 302.5
- Bolt pitch for installation: 800

- Unit: mm
- Basically open 100mm or more
- 100mm or more
- 300mm or more
- 350mm or more

REQUIRED SPACE

Basically open 100mm or more without any obstruction in front and on both sides of the unit.

Open two sides of left, right, or rear side.

Unit: mm

- Drain hole: 42
- Handle: 550
- Service panel: 285
- Service port: 344.5
- Liquid refrigerant pipe joint: 6.35
- Gas refrigerant pipe joint: 9.52

- 2-Oval holes 10×21
- Air in
- Air out
- Bolt pitch for installation: 500
- Bolt pitch for installation: 302.5
- Bolt pitch for installation: 800

- Unit: mm
- Basically open 100mm or more
- 100mm or more
- 300mm or more
- 350mm or more
REQUIRED SPACE

Open as a rule
500mm or more if the front and both sides are open

100mm or more
200mm or more if there are obstacles to both sides

350mm or more

Open as a rule
500mm or more if the back, both sides and top are open

Drain holes φ33

Air in
Air out

-4 Oval holes 10×21

Service panel

Liquid refrigerant pipe joint
Refrigerant pipe (flared) φ6.35

Gas refrigerant pipe joint
Refrigerant pipe (flared) φ12.7·····(SUZ-KA50VA2.TH)
φ15.88···(SUZ-KA60VA2.TH)

SUZ-KA50VA2.TH SUZ-KA60VA2.TH

Unit: mm

121
840
155
198
81
500
155
330
121
410
850
515
299
80
40

SUZ-KA50VA2.TH   SUZ-KA60VA2.TH
REQUIRED SPACE

Open as a rule
500mm or more if the front and both sides are open

100mm or more
200mm or more if there are obstacles to both sides

Open as a rule
500mm or more if the back, both sides and top are open

Service panel

- Liquid refrigerant pipe joint
- Refrigerant pipe (flared) ø 9.52
- Gas refrigerant pipe joint
- Refrigerant pipe (flared) ø 15.88

Unit: mm
NOTES:
1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only. (For field wiring)
3. Symbols below indicate:
   - Terminal block
1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only (for field wiring).
3. Symbols below indicate.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NAME</th>
<th>SYMBOL</th>
<th>NAME</th>
<th>SYMBOL</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>CURRENT TRANSFORMER</td>
<td>LEV</td>
<td>EXPANSION VALVE COIL</td>
<td>R61</td>
<td>CURRENT-DETECTING RESISTOR</td>
</tr>
<tr>
<td>C61,62,63</td>
<td>SMOOTHING CAPACITOR</td>
<td>MF</td>
<td>FAN MOTOR</td>
<td>R625</td>
<td>CURRENT-DETECTING RESISTOR</td>
</tr>
<tr>
<td>DB61,B62</td>
<td>DIODE MODULE</td>
<td>DF</td>
<td>CURRENT-DETECTING RESISTOR</td>
<td>R937A,B</td>
<td>CURRENT-DETECTING RESISTOR</td>
</tr>
<tr>
<td>DSA</td>
<td>SURGE ABSORBER</td>
<td>DF</td>
<td>CURRENT-DETECTING RESISTOR</td>
<td>T801</td>
<td>TRANSFORMER</td>
</tr>
<tr>
<td>F61</td>
<td>FUSE (T20AL 250V)</td>
<td>BF</td>
<td>TERMINAL BLOCK</td>
<td>T821</td>
<td>SWITCHING POWER TRANSISTOR</td>
</tr>
<tr>
<td>RT61</td>
<td>FUSE (T3.15AL 250V)</td>
<td>BF</td>
<td>DISCHARGE TEMP. THERMISTOR</td>
<td>T801</td>
<td>TRANSFORMER</td>
</tr>
<tr>
<td>IC802</td>
<td>INTELLIGENT POWER MODULE</td>
<td>BF</td>
<td>AMBIENT TEMP. THERMISTOR</td>
<td>X63</td>
<td>REVERSING VALVE COIL</td>
</tr>
<tr>
<td>L61</td>
<td>REACTOR</td>
<td>NF</td>
<td>OUTDOOR HEAT EXCHANGER</td>
<td>RT61</td>
<td>TEMP. THERMISTOR</td>
</tr>
<tr>
<td>L62</td>
<td>REACTOR</td>
<td>NF</td>
<td>TEMP. THERMISTOR</td>
<td>RT68</td>
<td></td>
</tr>
</tbody>
</table>

NOTES: 1. Use copper conductors only (for field wiring).
2. Symbols below indicate.

: Terminal block.
1. About the indoor side electric wiring diagram for servicing. Refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only (for field wiring).
3. Symbols below indicate:

- Terminal block
- Current Transformer
- Fuse (T1AL 250V)
- Lev Expansion Valve
- Reactor
- Intelligent Power Module (IPM)
- Current Transformer (CT1, 2)
- Intelligent Power Module (HC930)
- Fuse (T2AL 250V) (F64)
- Smoothing Capacitor (CB1~3)
- Fan Motor
- Power Factor Controller
- Noise Filter
- RT61
- Discharge Temperature Thermistor
- Resistor (RS1~4)
- Resistor (R937A, B)
- Compressor (MC, MF)
- Resistor (R64A,B)
- Noise Filter (NF)
- Resistor (NR64)
- Ambient Temperature Thermistor
- Solenoid Coil Relay
- Reversing Valve Coil (21S4)
- Transformer (T801)
- SSR61
- Out Door Heat Exchanger Temperature Thermistor
- Defrost Thermostat
- Resistor (RT63)
- Intelligent Power Module (IPM)
- Reactor
<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NAME</th>
<th>SYMBOL</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1-2</td>
<td>SMOOTHING CAPACITOR</td>
<td>F1</td>
<td>FUSE (13.15A 250V)</td>
</tr>
<tr>
<td>F601</td>
<td>FUSE (12A 250V)</td>
<td>F62</td>
<td>FUSE (12A 250V)</td>
</tr>
<tr>
<td>F850</td>
<td>FUSE (16A 250V)</td>
<td>F802</td>
<td>FUSE (16A 250V)</td>
</tr>
<tr>
<td>F901</td>
<td>FUSE (16A 250V)</td>
<td>F901</td>
<td>FUSE (16A 250V)</td>
</tr>
<tr>
<td>IC932</td>
<td>INTELLIGENT POWER MODULE</td>
<td>RT61</td>
<td>DEFROST THERMISTOR</td>
</tr>
<tr>
<td>IPM</td>
<td>INTELLIGENT POWER MODULE</td>
<td>RT62</td>
<td>DISCHARGE TEMP. THERMISTOR</td>
</tr>
<tr>
<td>L</td>
<td>REACTOR</td>
<td>RT63</td>
<td>FAN TEMP. THERMISTOR</td>
</tr>
<tr>
<td>LEV</td>
<td>EXPANSION VALVE COIL</td>
<td>RT64</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>MC</td>
<td>COMPRESSOR</td>
<td>RT65</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>MF</td>
<td>FAN MOTOR</td>
<td>RT66</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>PFC</td>
<td>POWER FACTOR CONTROLLER</td>
<td>RT67</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>PTC64</td>
<td>CIRCUIT PROTECTION</td>
<td>RT68</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>T801</td>
<td>TRANSFORMER</td>
<td>RT69</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>X601</td>
<td>RELAY</td>
<td>X602</td>
<td>AMBIENT TEMP. THERMISTOR</td>
</tr>
<tr>
<td>X64</td>
<td>RELAY</td>
<td>X64</td>
<td>RELAY</td>
</tr>
<tr>
<td>X64</td>
<td>REVERSING VALVE SOLENOID COIL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
1. About the indoor side electric wiring, refer to the indoor unit electric wiring diagram for servicing.
2. Use copper conductors only for field wiring.
3. Symbols indicate: [ ] Terminal block.
**ADDITIONAL REFRIGERANT CHARGE (R410A: g)**

<table>
<thead>
<tr>
<th>Models</th>
<th>Outdoor unit precharged</th>
<th>Refrigerant piping length (one way)</th>
<th>Refrigerant piping length (one way)</th>
<th>Refrigerant piping length (one way)</th>
<th>Refrigerant piping length (one way)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5m</td>
<td>6m</td>
<td>7m</td>
<td>8m</td>
</tr>
<tr>
<td>SUZ-KA25VA2.TH</td>
<td>800</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>SUZ-KA35VA2.TH</td>
<td>1,050</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>90</td>
</tr>
</tbody>
</table>

Calculation: \( X_g = 30g/m \times (\text{Refrigerant piping length(m)} - 5) \)

<table>
<thead>
<tr>
<th>Models</th>
<th>Outdoor unit precharged</th>
<th>Refrigerant piping length (one way)</th>
<th>Refrigerant piping length (one way)</th>
<th>Refrigerant piping length (one way)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>7m</td>
<td>10m</td>
<td>15m</td>
</tr>
<tr>
<td>SUZ-KA50VA2.TH</td>
<td>1,600</td>
<td>0</td>
<td>60</td>
<td>160</td>
</tr>
<tr>
<td>SUZ-KA60VA2.TH</td>
<td>1,800</td>
<td>0</td>
<td>60</td>
<td>160</td>
</tr>
</tbody>
</table>

Calculation: \( X_g = 20g/m \times (\text{Refrigerant piping length(m)} - 7) \)

<table>
<thead>
<tr>
<th>Models</th>
<th>Outdoor unit precharged</th>
<th>Refrigerant piping length (one way)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>7m</td>
</tr>
<tr>
<td>SUZ-KA71VA2.TH</td>
<td>1,800</td>
<td>0</td>
</tr>
</tbody>
</table>

Calculation: \( X_g = 55g/m \times (\text{Refrigerant piping length(m)} - 7) \)

---

**MAX. REFRIGERANT PIPING LENGTH**

<table>
<thead>
<tr>
<th>Models</th>
<th>Max. Length A</th>
<th>Max. Height difference B</th>
<th>Piping size O.D: mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUZ-KA25VA2.TH</td>
<td>20</td>
<td>12</td>
<td>9.52</td>
</tr>
<tr>
<td>SUZ-KA35VA2.TH</td>
<td>30</td>
<td>30(15)</td>
<td>15.88</td>
</tr>
<tr>
<td>SUZ-KA50VA2.TH</td>
<td></td>
<td></td>
<td>6.35</td>
</tr>
<tr>
<td>SUZ-KA60VA2.TH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUZ-KA71VA2.TH</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**MAX. HEIGHT DIFFERENCE**

- Height difference limitations are binding regardless of which unit, indoor or outdoor, is position high.

---

( ): MFZ-KA50VA-E4
9-1. Outdoor fan motor control
The fan motor turns ON/OFF, interlocking with the compressor.
[ON] The fan motor turns ON 5 seconds before the compressor starts up.
[OFF] The fan motor turns OFF 15 seconds after the compressor has stopped running.

9-2. R.V. coil control
Heating: ON  COoling: OFF  Dry: OFF

<COOL>  5 seconds  <HEAT>  5 seconds

Note: The 4-way valve reverses for 5 seconds right before start-up of the compressor.

9-3. Relation between main sensor and actuator

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Purpose</th>
<th>Compressor</th>
<th>LEV</th>
<th>Outdoor fan motor</th>
<th>R.V.coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge temperature thermistor</td>
<td>Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indoor coil temperature thermistor</td>
<td>Cooling: Coil frost prevention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heating: High pressure protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defrost thermistor</td>
<td>Heating: Defrosting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fin temperature thermistor</td>
<td>Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature thermistor</td>
<td>Cooling: Low ambient temperature operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature thermistor</td>
<td>Cooling: Low ambient temperature operation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling: High pressure protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
10 SERVICE FUNCTIONS

SUZ-KA25VA2.TH  SUZ-KA35VA2.TH

CHANGE IN DEFROST SETTING

<JS> When the JS wire of the outdoor Inverter P.C. board is cut/soldered, the defrost finish temperature is changed.
(Refer to 11-6-1)

<table>
<thead>
<tr>
<th>Jumper wire</th>
<th>Defrost finish temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>soldered (Initial setting)</td>
<td>5°C</td>
</tr>
<tr>
<td>none (cut)</td>
<td>8°C</td>
</tr>
</tbody>
</table>

11 TROUBLESHOOTING

SUZ-KA25VA2.TH  SUZ-KA35VA2.TH  SUZ-KA50VA2.TH  SUZ-KA60VA2.TH  SUZ-KA71VA2.TH

11-1. Cautions on troubleshooting

1. Before troubleshooting, check the following:
   1) Check the power supply voltage.
   2) Check the indoor/outdoor connecting wire for miswiring.
2. Take care the following during servicing.
   1) Before servicing the air conditioner, be sure to turn OFF the main unit first with the remote controller, and turn off the breaker.
   2) Be sure to turn OFF the power supply before removing the front panel, the cabinet, the top panel, and the electronic control P.C. board.
   3) When removing the electrical parts, be careful of the residual voltage of smoothing capacitor.
   4) When removing the electronic control P.C. board, hold the edge of the board with care NOT to apply stress on the components.
   5) When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

3. Troubleshooting procedure
   1) First, check if the OPERATION INDICATOR lamp is blinking on and off to indicate an abnormality. To make sure, check how many times the abnormality indication is blinking on and off before starting service work.
   2) Before servicing check that the connector and terminal are connected properly.
   3) If the electronic control P.C. board is supposed to be defective, check the copper foil pattern for disconnection and the components for bursting and discoloration.
   4) When troubleshooting, refer to 11-2. and 11-3.
11-2. Failure mode recall function

As this air conditioner has a function to memorize all the failures that had happened, the latest failure detail can be recalled by following the procedures below.
Use this function when the check code is not displayed with wired remote controller or the remote controller at use is wireless type.

11-2-1. Flow chart of the indoor/outdoor unit failure mode recall function

Operational procedure (For wireless remote controller)

Setting up the failure mode recall function

1. Turn ON the power supply.
2. While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
3. First, release RESET button.
4. And release the other two buttons since all LCD in operation display section of the remote controller is displayed after 3 seconds.

1. Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed).

Does OPERATION INDICATOR lamp on the indoor unit blink at the interval of 0.5 seconds?

- Blinks: Either indoor or outdoor unit is abnormal. Beep sounds are emitted at the same timing of the blinking of OPERATION INDICATOR lamp.
- (OFF): Indoor unit is normal.

Judgment of indoor/outdoor abnormality

1. Before blinking, does POWER lamp stay ON for 3 seconds?
2. Stays ON for 3 seconds (without beep): The outdoor unit is abnormal.
3. Does OPERATION INDICATOR lamp blink at the interval of 0.5 seconds?
4. Beep: Either indoor or outdoor unit is abnormal. Beep sounds are emitted at the same timing of the blinking of OPERATION INDICATOR lamp.

The outdoor unit is abnormal.

Check the blinking pattern, and confirm the abnormal point.

Make sure to check at least two consecutive blinking cycles.

Releasing the failure mode recall function

1. Release the failure mode recall function by the following procedures.

- While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
- First, release RESET button.
- And release the other two buttons since all LCD in operation display section of the remote controller is displayed after 3 seconds.

2. Repair the defective parts.

Note 1. Make sure to release the failure mode recall function once it is set up, otherwise the unit cannot operate properly.
2. If the abnormal condition is not deleted from the memory, the last abnormal condition is kept memorized.

**2. Blinking pattern when the indoor unit is abnormal [Output pattern A]**

- Beep sounds
- OPERATION INDICATOR lamp blink pattern
- Self-check starts (Start signal received)
- Number of blinks/beeps in pattern indicates the check code in the next page (i.e., n/5 for "P5")

**3. Blinking pattern when the outdoor unit is abnormal [Output pattern B]**

- Beep sounds
- OPERATION INDICATOR lamp blink pattern
- Self-check starts (Start signal received)
- Number of blinks/beeps in pattern indicates the check code in the next page (i.e., n/5 for "U2")
11-2-2. Wired remote controller

- Check on the power.
- Press the [CHECK] button twice.
- Refrigerant address
- Set refrigerant address with [TEMP] button if system control is used.
- IC: Indoor unit
- OC: Outdoor unit
- Outdoor unit
- Check code

11-2-3. Failure mode table (Wireless remote controller/Wired remote controller)

[Output pattern A] Errors detected by indoor unit

<table>
<thead>
<tr>
<th>Check code</th>
<th>Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)</th>
<th>Symptom</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>1</td>
<td>Intake sensor error</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>2</td>
<td>Pipe (TH2) sensor error</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>3</td>
<td>Indoor/outdoor unit communication error</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>4</td>
<td>Drain sensor error/Float switch connector open</td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>5</td>
<td>Drain pump error</td>
<td></td>
</tr>
<tr>
<td>P6</td>
<td>6</td>
<td>Freezing/Overheating protection operation</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>7</td>
<td>Communication error between indoor and outdoor units</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>8</td>
<td>Pipe temperature error</td>
<td></td>
</tr>
<tr>
<td>E4, E5</td>
<td>9</td>
<td>Remote controller signal receiving error</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Fb</td>
<td>12</td>
<td>Indoor unit control system error (memory error, etc.)</td>
<td></td>
</tr>
<tr>
<td>E0, E3</td>
<td>–</td>
<td>Remote controller transmission error</td>
<td></td>
</tr>
<tr>
<td>E1, E2</td>
<td>–</td>
<td>Remote controller control board error</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Check code</th>
<th>Beeper sounds/OPERATION INDICATOR lamp blinks (Number of times)</th>
<th>Symptom</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>E9</td>
<td>1</td>
<td>Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)</td>
<td></td>
</tr>
<tr>
<td>U9</td>
<td>2</td>
<td>Compressor overcurrent interruption</td>
<td></td>
</tr>
<tr>
<td>U8, U4</td>
<td>3</td>
<td>Open/short of outdoor unit thermistors</td>
<td></td>
</tr>
<tr>
<td>U7</td>
<td>4</td>
<td>Compressor overcurrent interruption (When compressor locked)</td>
<td></td>
</tr>
<tr>
<td>U2</td>
<td>5</td>
<td>Abnormal high discharging temperature/Insufficient refrigerant</td>
<td></td>
</tr>
<tr>
<td>U1, U4</td>
<td>6</td>
<td>Abnormal high pressure (63H worked)/Overheating protection operation</td>
<td></td>
</tr>
<tr>
<td>U5</td>
<td>7</td>
<td>Abnormal temperature of heat sink</td>
<td></td>
</tr>
<tr>
<td>U8</td>
<td>8</td>
<td>Outdoor unit fan protection stop</td>
<td></td>
</tr>
<tr>
<td>U6</td>
<td>9</td>
<td>Compressor overcurrent interruption/Abnormal of power module</td>
<td></td>
</tr>
<tr>
<td>U9, U4</td>
<td>10</td>
<td>Abnormality of super heat due to low discharge temperature</td>
<td></td>
</tr>
<tr>
<td>U9, UH</td>
<td>11</td>
<td>Abnormality such as overvoltage or voltage shortage and abnormal synchronous signal to main circuit/Current sensor error</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td>12</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>13</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Others</td>
<td>14</td>
<td>Other errors</td>
<td></td>
</tr>
</tbody>
</table>

- If the beeper does not sound again after the initial two beeps to confirm the self-check start signal was received and the OPERATION INDICATOR lamp does not come on, there are no error records.
- If the beeper sounds three times continuously “beep, beep, beep (0.4 + 0.4 + 0.4 sec.)” after the initial two beeps to confirm the self-check start signal was received, the specified refrigerant address is incorrect.
- On wireless remote controller:
  - The continuous buzzer sounds from receiving section of indoor unit.
  - Blink of operation lamp
  - Check code displayed in the LCD.
<table>
<thead>
<tr>
<th>Abnormal point (Failure mode/protection)</th>
<th>LED indication (Outdoor P.C. board)</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (Normal)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Outdoor power system</td>
<td>—</td>
<td>Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started.</td>
<td>• Reconnect connectors. • Refer to 11-5. &quot;How to check inverter/compressor&quot; • Check stop valve.</td>
</tr>
<tr>
<td>Discharge temperature thermistor</td>
<td>1-time flash every 2.5 seconds OFF</td>
<td>Thermistor shorts or opens during compressor running.</td>
<td>• Refer to 11-5. &quot;Check of outdoor thermistors&quot;. Defective outdoor thermistors can be identified by checking the blinking pattern of LED.</td>
</tr>
<tr>
<td>Defrost thermistor</td>
<td>3-time flash 2.5 seconds OFF</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Fin temperature thermistor</td>
<td>4-time flash 2.5 seconds OFF</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>P.C. board temperature thermistor</td>
<td>2-time flash 2.5 seconds OFF</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Ambient temperature thermistor</td>
<td>11-time flash 2.5 seconds OFF</td>
<td>Large current flows into intelligent power module.</td>
<td>• Reconnect compressor connector. • Refer to 11-5. &quot;How to check inverter/compressor&quot; • Check stop valve.</td>
</tr>
<tr>
<td>Overcurrent</td>
<td>12-time flash 2.5 seconds OFF</td>
<td>Waveform of compressor current is distorted.</td>
<td>• Reconnect compressor connector. • Refer to 11-5. &quot;How to check inverter/compressor&quot;</td>
</tr>
<tr>
<td>Compressor synchronous abnormality (Compressor start-up failure protection)</td>
<td>14-time flash 2.5 seconds OFF</td>
<td>Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes.</td>
<td>• Check refrigerant circuit and refrigerant amount. • Check stop valve.</td>
</tr>
<tr>
<td>Discharge temperature</td>
<td>7-time flash 2.5 seconds OFF</td>
<td>Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.</td>
<td>• Check refrigerant circuit and refrigerant amount. • Check stop valve.</td>
</tr>
<tr>
<td>High pressure</td>
<td>8-time flash 2.5 seconds OFF</td>
<td>Temperature indoor coil thermistor exceeds 70°C in HEAT mode. Temperature defrost thermistor exceeds 70°C in COOL mode.</td>
<td>• Check refrigerant circuit and refrigerant amount. • Check stop valve.</td>
</tr>
<tr>
<td>Fin temperature/P.C. board temperature</td>
<td>9-time flash 2.5 seconds OFF</td>
<td>Temperature of fin temperature thermistor on the inverter P.C. board exceeds 75 ~ 80°C, or temperature of P.C. board temperature thermistor on the inverter P.C. board exceeds 70 ~ 75°C.</td>
<td>• Check around outdoor unit. • Check outdoor unit air passage. • Refer to 11-5. &quot;Check of outdoor fan motor&quot;</td>
</tr>
<tr>
<td>Outdoor fan motor</td>
<td>10-time flash 2.5 seconds OFF</td>
<td>Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.</td>
<td>• Refer to 11-5. &quot;Check of outdoor fan motor&quot; • Refer to 11-5. &quot;Check of inverter P.C. board&quot;</td>
</tr>
<tr>
<td>Nonvolatile memory data</td>
<td>11-time flash 2.5 seconds OFF</td>
<td>Nonvolatile memory data cannot be read properly.</td>
<td>• Replace the inverter P.C. board.</td>
</tr>
<tr>
<td>Discharge temperature</td>
<td>5-time flash 2.5 seconds OFF</td>
<td>Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes.</td>
<td>• Refer to 11-5. &quot;Check of LEV&quot; • Check refrigerant circuit and refrigerant amount.</td>
</tr>
<tr>
<td>DC voltage</td>
<td>6-time flash 2.5 seconds OFF</td>
<td>DC voltage of inverter cannot be detected normally.</td>
<td>• Refer to 11-5. &quot;How to check inverter/compressor&quot;</td>
</tr>
<tr>
<td>Each phase current of compressor</td>
<td>7-time flash 2.5 seconds OFF</td>
<td>Each phase current of compressor cannot be detected normally.</td>
<td>• Refer to 11-5. &quot;How to check inverter/compressor&quot;</td>
</tr>
<tr>
<td>Overcurrent Compressor open-phase</td>
<td>8-time flash 2.5 seconds OFF</td>
<td>Large current flows into intelligent power module (IPM). The open-phase operation of compressor is detected. The interphase short out occurs in the output of the intelligent power module (IPM). The compressor winding shorts out.</td>
<td>• Reconnect compressor connector. • Refer to 11-5. &quot;How to check inverter/compressor&quot;</td>
</tr>
<tr>
<td>Stop valve (Closed valve)</td>
<td>14-time flash 2.5 seconds OFF</td>
<td>Closed valve is detected by compressor current.</td>
<td>• Check stop valve</td>
</tr>
</tbody>
</table>

**NOTE:** Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-3.).
<table>
<thead>
<tr>
<th>Outdoor LED indication</th>
<th>Abnormal point (Failure mode)</th>
<th>Details of abnormal</th>
<th>Detecting method</th>
<th>Check point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lightning</td>
<td>Once</td>
<td>Outdoor thermistors</td>
<td>Discharge temperature thermistor</td>
<td>When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 10 minutes of compressor start-up.</td>
</tr>
<tr>
<td></td>
<td>Twice</td>
<td>Ambient temperature thermistor</td>
<td>When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 5 minutes of compressor start-up.</td>
<td>• Replace the outdoor electronic control P.C. board.</td>
</tr>
<tr>
<td></td>
<td>3 times</td>
<td>Fin temperature thermistor</td>
<td>When a short or open circuit is detected in the thermistor during operation.</td>
<td>• Check the outdoor thermistors.</td>
</tr>
<tr>
<td></td>
<td>4 times</td>
<td>P.C. board temperature thermistor</td>
<td>When a short or open circuit is detected in the thermistor after 5 minutes (in cooling) and 10 minutes (in heating) of compressor start-up.</td>
<td>• Replace the outdoor electronic control P.C. board.</td>
</tr>
<tr>
<td></td>
<td>9 times</td>
<td>Outdoor heat exchanger temperature thermistor</td>
<td>When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 5 minutes of compressor start-up.</td>
<td>• Check the outdoor thermistors.</td>
</tr>
<tr>
<td></td>
<td>5 times</td>
<td>Outdoor control system</td>
<td>EEPROM</td>
<td>When nonvolatile memory data cannot be read properly, unit stops.</td>
</tr>
<tr>
<td></td>
<td>6 times</td>
<td>Converter control system</td>
<td>Communication error between P.C. boards</td>
<td>When the communication between boards protection stop is continuously performed twice.</td>
</tr>
<tr>
<td></td>
<td>7 times</td>
<td>Communication between P.C. boards protection</td>
<td>Communication error occurs between the electronic control P.C.board and power board for more than 10 seconds.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>5 times</td>
<td>Current sensor protection</td>
<td>Current sensor protection stop is continuously performed twice.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Zero cross detecting circuit</td>
<td>The protection stop of the zero cross detecting circuit is continuously performed 10 times.</td>
<td>• Check the connecting wire among electronic control P.C. board, noise filter P.C. board and power board.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Zero cross detecting circuit protection</td>
<td>When zero cross signal cannot be detected while the compressor is operating.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Converter protection</td>
<td>When a failure is detected in the operation of the converter during operation.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Bus-bar voltage protection (1)</td>
<td>When the bus-bar voltage exceeds 400V or falls to 200V or below during compressor operating.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Bus-bar voltage protection (2)</td>
<td>When the bus-bar voltage exceeds 400V or falls to 50V or below during compressor operating.</td>
<td>• Replace the power board.</td>
</tr>
<tr>
<td></td>
<td>Once</td>
<td>Overcurrent protection</td>
<td>IPM protection</td>
<td>When overcurrent is detected after 30 seconds of compressor start-up.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Lock protection</td>
<td>When overcurrent is detected within 30 seconds after the compressor gets started.</td>
<td>• Check the inverter/compressor.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Fin temperature/P.C. board temperature protection</td>
<td>When the fin temperature exceeds 87°C during operation.</td>
<td>• Check the stop valve.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Fin temperature overhead protection</td>
<td>When the fin temperature exceeds 70°C during operation.</td>
<td>• Check around outdoor unit.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>P.C.board temperature overhead protection</td>
<td>When the P.C. board temperature exceeds 70°C during operation.</td>
<td>• Check the outdoor unit air passage.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Refrigerant system</td>
<td>Discharge temperature overhead protection</td>
<td>When discharge temperature exceeds 116°C.</td>
</tr>
<tr>
<td>Lighting</td>
<td>Goes out</td>
<td>High pressure protection</td>
<td>HPS protection</td>
<td>When high-pressure is detected with the high-pressure switch (HPS) during operation.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>High pressure protection (Overheat protection)</td>
<td>When the indoor coil thermistor (TH5) exceeds 70°C in HEAT mode. When the outdoor heat exchanger thermistor exceeds 70°C in COOL mode.</td>
<td>• Check the LEV.</td>
</tr>
<tr>
<td></td>
<td>Goes out</td>
<td>Low discharge temperature protection</td>
<td>When the frequency of the compressor is kept 80Hz or more and discharge temperature is kept under 39°C for more than 20 minutes.</td>
<td>• Check refrigerant circuit and refrigerant amount.</td>
</tr>
</tbody>
</table>
| | Goes out | Outdoor fan protection  | When outdoor fan has stopped within 30 seconds 3 times in a row after outdoor fan start-up, unit stops. | • Check the outdoor fan motor.
| | Goes out | Outdoor power system  | Outdoor power system  | When IPM protection stop or lock protection stop is continuously performed 3 times within 1 minute after the compressor get started, or when converter protection stop or bus-bar voltage protection stop is continuously performed 3 times within 3 minutes after start-up. | • Reconnect compressor connector. |

NOTE: Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-3).
### SUZ-KA71VA2.TH

<table>
<thead>
<tr>
<th>Abnormal point (Failure mode / protection)</th>
<th>LED indication (Outdoor P.C. board)</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (Normal)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
| Outdoor power system                      | —                                  | Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started. | • Reconnect connectors.  
• Refer to 11-5. "How to check inverter/compressor".  
• Check stop valve. |
| Discharge temperature thermistor          | 1-time flash every 2.5 seconds     | Thermistor shorts or opens during compressor running. | • Refer to 11-5. "Check of outdoor thermistors".  
Defective outdoor thermistors can be identified by checking the blinking pattern of LED. |
| Defrost thermistor                        | —                                  | —         | —              |
| Fin temperature thermistor                | 3-time flash 2.5 seconds OFF       | —         | —              |
| P.C. board temperature thermistor         | 4-time flash 2.5 seconds OFF       | —         | —              |
| Ambient temperature thermistor            | 2-time flash 2.5 seconds OFF       | —         | —              |
| Outdoor heat exchanger temperature thermoditor | —                                  | —         | —              |
| Overcurrent                               | 11-time flash 2.5 seconds OFF      | Large current flows into intelligent power module. | • Reconnect compressor connector.  
• Refer to 11-5. "How to check inverter/compressor".  
• Check stop valve. |
| Compressor synchronous abnormality        | 12-time flash 2.5 seconds OFF      | Waveform of compressor current is distorted. | • Reconnect compressor connector.  
• Refer to 11-5. "How to check inverter/compressor". |
| Discharge temperature                     | —                                  | —         | —              |
| High pressure                             | —                                  | —         | —              |
| Fin temperature/ P.C. board temperature   | 7-time flash 2.5 seconds OFF       | Temperature of fin temperature thermistor on the inverter P.C. board exceeds 75°C in COOL mode. | • Check refrigerant circuit and refrigerant amount.  
• Check stop valve.  
• Refer to 11-5. "Check of LEV". |
| Outdoor fan motor                         | —                                  | Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up. | • Refer to 11-5. "Check of outdoor fan motor".  
• Refer to 11-5. "Check of inverter P.C. board". |
| Nonvolatile memory data                   | 5-time flash 2.5 seconds OFF       | Nonvolatile memory data cannot be read properly. | • Replace the inverter P.C. board. |
| Power module                              | 6-time flash 2.5 seconds OFF       | The interphase short circuit occurs in the output of the intelligent power module (IPM). The compressor winding shorts circuit. | • Refer to 11-5. "How to check inverter/compressor". |
| Discharge temperature                     | —                                  | Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes. | • Refer to 11-5. "Check of LEV".  
• Check refrigerant circuit and refrigerant amount. |
| DC voltage                                | 8-time flash 2.5 seconds OFF       | DC voltage of inverter cannot be detected normally. | • Refer to 11-5. "How to check inverter/compressor". |
| Each phase current of compressor          | 9-time flash 2.5 seconds OFF       | Each phase current of compressor cannot be detected normally. | • Refer to 11-5. "How to check inverter/compressor". |
| Overcurrent Compressor open-phase         | 10-time flash 2.5 seconds OFF      | Large current flows into intelligent power module (IPM). The open-phase operation of compressor is detected. The interphase short circuit occurs in the output of the intelligent power module (IPM). The compressor winding shorts circuit. | • Reconnect compressor connector.  
• Refer to 11-5. "How to check inverter/compressor". |
| Stop valve (Closed valve)                 | 14-time flash 2.5 seconds OFF      | Closed valve is detected by compressor current. | • Check stop valve. |

**NOTE:** Blinking patterns of this mode differ from the ones of Troubleshooting check table (11-3).
### 11-3. Trouble shooting check table

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>LED indication</th>
<th>Abnormal point/Condition</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Outdoor unit does not operate. 1-time flash every 2.5 seconds OFF</td>
<td>Outdoor lighted during normal operation.</td>
<td>Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started, or failure of restart of compressor has repeated 24 times.</td>
<td>•Reconnect connector of compressor. •Refer to 11-2. &quot;How to check inverter/compressor&quot;. •Check stop valve.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2.5 seconds OFF</td>
<td>Outdoor thermistors</td>
<td>Discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor or ambient temperature thermistor shorts or opens during compressor running.</td>
<td>•Refer to 11-5. &quot;Check of outdoor thermistors&quot;.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.5 seconds OFF</td>
<td>Outdoor control system</td>
<td>Nonvolatile memory data cannot be read properly. (The left lamp of OPERATION INDICATOR lamp of the indoor unit lights up or flashes 7-time.)</td>
<td>•Replace inverter P.C. board.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2.5 seconds OFF</td>
<td>Serial signal</td>
<td>The communication fails between the indoor and outdoor unit for 3 minutes.</td>
<td>•Refer to 11-5. &quot;How to check wiring and serial signal error&quot;.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>11-time flash 2.5 seconds OFF</td>
<td>Stop valve/Closed valve</td>
<td>Closed valve is detected by compressor current.</td>
<td>•Check stop valve.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>14-time flash 2.5 seconds OFF</td>
<td>Outdoor unit (Other abnormality)</td>
<td>Outdoor unit is defective.</td>
<td>•Refer to 11-2. &quot;Flow chart of the detailed outdoor unit failure mode recall function&quot;.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>2.5 seconds OFF</td>
<td>Overcurrent protection</td>
<td>Large current flows into intelligent power module, or compressor repeats after 15 seconds when overcurrent protection occurs within 10 seconds after compressor starts. (Repeated 24 times at Maximum)</td>
<td>•Reconnect connector of compressor. •Refer to 11-2. &quot;How to check inverter/compressor&quot;. •Check stop valve.</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3-time flash 2.5 seconds OFF</td>
<td>Discharge temperature overheating protection</td>
<td>Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later.</td>
<td>•Check refrigerant circuit and refrigerant amount. •Refer to 11-5. &quot;Check of LEV&quot;.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>4-time flash 2.5 seconds OFF</td>
<td>Fin temperature/P.C. board temperature/thermistor overheating protection</td>
<td>Temperature of fin temperature thermistor on the heat sink exceeds 75 ~ 80°C or temperature of P.C. board temperature thermistor on the inverter P.C.board exceeds 70 ~ 75°C.</td>
<td>•Check around outdoor unit. •Refer to 11-5. &quot;Check of outdoor fan motor&quot;.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>5-time flash 2.5 seconds OFF</td>
<td>High pressure protection</td>
<td>Indoor coil thermistor exceeds 70°C in HEAT mode. Defrost thermistor exceeds 70°C in COOL mode.</td>
<td>•Check refrigerant circuit and refrigerant amount. •Check stop valve.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>8-time flash 2.5 seconds OFF</td>
<td>Compressor synchronous abnormality</td>
<td>The waveform of compressor current is distorted.</td>
<td>•Reconnect connector of compressor. •Refer to 11-5. &quot;How to check inverter/compressor&quot;.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>10-time flash 2.5 seconds OFF</td>
<td>Outdoor fan motor</td>
<td>Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up.</td>
<td>•Refer to 11-5. &quot;Check of outdoor fan motor&quot;. •Refer to 11-5. &quot;Check of inverter P.C. board&quot;.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>12-time flash 2.5 seconds OFF</td>
<td>Each phase current of compressor</td>
<td>Each phase current of compressor cannot be detected normally.</td>
<td>•Refer to 11-5. &quot;How to check inverter/compressor&quot;.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>13-time flash 2.5 seconds OFF</td>
<td>DC voltage</td>
<td>DC voltage of inverter cannot be detected normally.</td>
<td>•Refer to 11-5. &quot;How to check inverter/compressor&quot;.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Outdoor unit operates. 1-time flash 2.5 seconds OFF</td>
<td>Frequency drop by current protection</td>
<td>Current from power outlet reaches the protection current, and compressor frequency lowers.</td>
<td>The unit is normal, but check the following. •Check if indoor/outdoor unit air circulation is short cycled.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>3-time flash 2.5 seconds OFF</td>
<td>Temperature of indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers.</td>
<td>Temperature of indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers.</td>
<td>•Check refrigerant circuit and refrigerant amount. •Refer to 11-5. &quot;Check of LEV&quot;.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>4-time flash 2.5 seconds OFF</td>
<td>Frequency drop by defrosting in COOL mode</td>
<td>Indoor coil thermistor reads 8°C or less in COOL mode, compressor frequency lowers.</td>
<td>•Check refrigerant circuit and refrigerant amount. •Refer to 11-5. &quot;Check of LEV&quot;.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Outdoor unit operates. 7-time flash 2.5 seconds OFF</td>
<td>Low discharge temperature protection</td>
<td>Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes.</td>
<td>•Check refrigerant circuit and refrigerant amount. •Check of LEV.</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>8-time flash 2.5 seconds OFF</td>
<td>PAM protection PAM Pulse Amplitude Modulation</td>
<td>The overcurrent flows into IGBT (Insulated Gate Bipolar transistor : TR621) or when the bus-bar voltage reaches 320 V or more, PAM stops and restarts.</td>
<td>This is not malfunction. PAM protection will be activated in the following cases: 1. Instantaneous power voltage drop (Short time power failure) 2. When the power supply voltage is high.</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>9-time flash 2.5 seconds OFF</td>
<td>Inverter check mode</td>
<td>The connector of compressor is disconnected, inverter check mode starts.</td>
<td>•Check if the connector of the compressor is correctly connected. •Refer to 11-5. &quot;How to check inverter/compressor&quot;.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** 1. The location of LED is illustrated at the right figure. Refer to 11-6-1. or 11-6-2. 2. LED is lighted during normal operation. The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF. (Example) When the flashing frequency is "2", 4.2-second OFF → 1.0-second OFF → 0.5-second OFF → 0.5-second ON
### SUZ-KA60VA2.TH

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>Indication</th>
<th>Abnormal point/Condition</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Outdoor unit does not operate.</td>
<td>Lightning</td>
<td>Twice</td>
<td>Outdoor power system</td>
<td>When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 10 minutes of compressor start-up.</td>
</tr>
<tr>
<td>2</td>
<td>Outdoor unit stops and restarts 3 minutes later is repeated.</td>
<td>Lightning</td>
<td>Twice</td>
<td>Outdoor power system</td>
<td>When a short circuit is detected in the thermistor during operation, or when an open circuit is detected in the thermistor after 10 minutes of compressor start-up.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Lightning</td>
<td>3 times</td>
<td>Discharge temperature thermostat</td>
<td>When the control board or outdoor P.C. board does not operate.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Lightning</td>
<td>4 times</td>
<td>Fin temperature thermometer</td>
<td>When the control board or outdoor P.C. board does not operate.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Lightning</td>
<td>5 times</td>
<td>Power board</td>
<td>When the control board or outdoor P.C. board does not operate.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Lightning</td>
<td>6 times</td>
<td>Communication between P.C. boards</td>
<td>When the control board or outdoor P.C. board does not operate.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Lightning</td>
<td>7 times</td>
<td>Nonvolatile memory data</td>
<td>When the nonvolatile memory data cannot be read properly.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Lightning</td>
<td>8 times</td>
<td>Current sensor</td>
<td>When the current sensor protection is continuously performed twice.</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Lightning</td>
<td>9 times</td>
<td>Communication between P.C. boards</td>
<td>When the communication between P.C. boards is continuously performed twice.</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Lightning</td>
<td>10 times</td>
<td>Zero cross detecting circuit</td>
<td>When the zero cross detecting circuit is continuously performed 10 times.</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Lightning</td>
<td>11 times</td>
<td>Communication error between P.C. boards</td>
<td>When the communication between P.C. boards is continuously performed twice.</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Lightning</td>
<td>12 times</td>
<td>Converter protection</td>
<td>When the converter protection is continuously performed 10 times.</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>Lightning</td>
<td>13 times</td>
<td>Outdoor fan motor</td>
<td>When the outdoor fan motor is operated.</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Lightning</td>
<td>14 times</td>
<td>Current sensor</td>
<td>When the current sensor protection is continuously performed twice.</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Lightning</td>
<td>15 times</td>
<td>Communication between P.C. boards</td>
<td>When the communication between P.C. boards is continuously performed twice.</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>Lightning</td>
<td>16 times</td>
<td>Communication error</td>
<td>When the outdoor electronic control P.C. board and power board is continuously performed twice.</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>Lighting</td>
<td>17 times</td>
<td>Communication between P.C. boards</td>
<td>When the current sensor protection is continuously performed twice.</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>Lighting</td>
<td>18 times</td>
<td>Communication error</td>
<td>When the communication between P.C. boards is continuously performed twice.</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>Lighting</td>
<td>19 times</td>
<td>Zero cross detecting-circuit protection</td>
<td>When the zero cross detecting circuit is continuously performed 10 times.</td>
</tr>
</tbody>
</table>

**NOTE 1.** The location of LED is illustrated at the right figure.
2. LED is lighted during normal operation.

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.
(Example) When the flashing frequency is "2".

### Outdoor electronic control P.C. board (Parts side)

- **LED1 (Red):** Indicates the power status of the outdoor electronic control P.C. board.
- **LED2 (Yellow):** Indicates the operating status of the outdoor electronic control P.C. board.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-second ON</td>
<td>Replace the power board.</td>
</tr>
<tr>
<td>0.5-second OFF</td>
<td>Replace the power board.</td>
</tr>
<tr>
<td>2.5-second OFF</td>
<td>Replace the power board.</td>
</tr>
</tbody>
</table>
### SUZ-KA60VA2.TH

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>Indication</th>
<th>Abnormal point/Condition</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Outdoor unit operates.</td>
<td>Once</td>
<td>Lighting</td>
<td>Primary current protection</td>
<td>When the input current exceeds 15A.</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td>Secondary current protection</td>
<td>When the current of the compressor exceeds 15A.</td>
</tr>
<tr>
<td>21</td>
<td>Twice</td>
<td>Lighting</td>
<td>High-pressure protection</td>
<td>When the indoor gas pipe temperature exceeds 45°C during heating.</td>
<td>• Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td></td>
<td>Defrosting in cooling</td>
<td>When the indoor gas pipe temperature falls 3°C or below during cooling.</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>3 times</td>
<td>Lighting</td>
<td>Discharge temperature protection</td>
<td>When the discharge temperature exceeds 100°C during operation.</td>
<td>• Check refrigerant circuit and refrigerant amount. • Refer to 11-5. &quot;Check of LEV&quot;. • Refer to 11-5. &quot;Check of outdoor thermistors&quot;.</td>
</tr>
<tr>
<td>23</td>
<td>4 times</td>
<td>Lighting</td>
<td>Low discharge temperature protection</td>
<td>When the frequency of the compressor is kept 80Hz or more and the discharge temperature is kept under 39°C for more than 20 minutes.</td>
<td>• Refer to 11-5. &quot;Check of LEV&quot;. • Check refrigerant circuit and refrigerant amount.</td>
</tr>
<tr>
<td>24</td>
<td>5 times</td>
<td>Lighting</td>
<td>Cooling high-pressure protection</td>
<td>When the outdoor heat exchanger temperature exceeds 58°C during operation.</td>
<td>This symptom does not mean any abnormality of the product, but check the following points. • Check if refrigerant is short. • Check if indoor/outdoor unit air circulation is short cycled.</td>
</tr>
<tr>
<td>25</td>
<td>Outdoor unit operates</td>
<td>8 times</td>
<td>Lighting</td>
<td>Inverter check mode</td>
<td>When the unit is operated with emergency operation switch.</td>
</tr>
<tr>
<td>26</td>
<td></td>
<td></td>
<td>Lighting</td>
<td>Normal</td>
<td>—</td>
</tr>
</tbody>
</table>
### SUZ-KA71VA2.TH

<table>
<thead>
<tr>
<th>No.</th>
<th>Symptom</th>
<th>LED indication</th>
<th>Abnormal point/ Condition</th>
<th>Condition</th>
<th>Correspondence</th>
</tr>
</thead>
</table>
| 1   | Outdoor unit operates. | 1-time flash every 2.5 seconds | Outdoor power system | Overcurrent protection stop is continuously performed 3 times within 1 minute after the compressor gets started. | • Reconnect connector of compressor.  
• Refer to 11-5. "How to check inverter/compressor".  
• Check stop valve. |
| 2   | Outdoor thermistor | 2.5 seconds OFF | Discharge temperature thermistor, fin temperature thermistor, defrost thermistor, P.C. board temperature thermistor, outdoor heat exchanger temperature thermistor or ambient temperature thermistor short or opens during compressor running. | • Refer to 11-5. "Check of outdoor thermistors". |
| 3   | Outdoor control system | 2.5 seconds OFF | Nonvolatile memory data cannot be read properly. (The upper lamp of OPERATION INDICATOR lamp of the indoor unit lights up or flashes 7-time.) | • Replace inverter P.C. board. |
| 4   | 6-time flash 2.5 seconds OFF | Serial signal | The communication fails between the indoor and outdoor unit for 3 minutes. | • Refer to 11-5. "How to check miswiring and serial signal error." |
| 5   | 11-time flash 2.5 seconds OFF | 1. Stop valve/ Closed valve | Closed valve is detected by compressor current. | • Check stop valve. |
| 6   | 14-time flash 2.5 seconds OFF | Outdoor unit (Other abnormality) | Outdoor unit is defective. | • Refer to 11-2.1. "Flow chart of the detailed outdoor unit failure mode recall function". |
| 7   | "Outdoor unit stops and restarts 3 minutes later" is repeated. | 2-time flash 2.5 seconds OFF | Overcurrent protection | Large current flows into intelligent power module. | • Reconnect connector of compressor.  
• Refer to 11-5. "How to check inverter/compressor".  
• Check stop valve. |
| 8   | 3-time flash 2.5 seconds OFF | Discharge pressure overheat protection | Temperature of discharge temperature thermistor exceeds 116°C, compressor stops. Compressor can restart if discharge temperature thermistor reads 100°C or less 3 minutes later. | • Check refrigerant circuit and refrigerant amount.  
• Refer to 11-5. "Check of LEV". |
| 9   | 4-time flash 2.5 seconds OFF | Fin temperature /P.C. board temperature thermistor overheating protection | Temperature of fin temperature thermistor on the heat sink exceeds 75 ~ 80°C or temperature of P.C. board temperature thermistor on the inverter P.C.board exceeds 70 ~ 75°C. | • Check around outdoor unit.  
• Check outdoor unit air passage.  
• Refer to 11-5. "Check of outdoor fan motor". |
| 10  | 5-time flash 2.5 seconds OFF | High pressure protection | Indoor coil thermistor exceeds 70°C in HEAT mode. Defrost thermistor exceeds 70°C in COOL mode. | • Check refrigerant circuit and refrigerant amount.  
• Check stop valve. |
| 11  | 8-time flash 2.5 seconds OFF | Compressor synchronous abnormality | The waveform of compressor current is distorted. | • Reconnect connector of compressor.  
• Refer to 11-5. "How to check inverter/compressor". |
| 12  | 10-time flash 2.5 seconds OFF | Outdoor fan motor | Outdoor fan has stopped 3 times in a row within 30 seconds after outdoor fan start-up. | • Refer to 11-5. "Check of outdoor fan motor".  
• Refer to 11-5. "Check of inverter P.C. board". |
| 13  | 12-time flash 2.5 seconds OFF | Each phase current of compressor | Each phase current of compressor cannot be detected normally. | • Refer to 11-5. "How to check inverter/compressor". |
| 14  | 13-time flash 2.5 seconds OFF | DC voltage | DC voltage of inverter cannot be detected normally. | • Refer to 11-5. "How to check inverter/compressor". |
| 15  | Outdoor unit operates. | 1-time flash 2.5 seconds OFF | Frequency drop by current protection | Current from power outlet is nearing breaker capacity. PFC module stops due to overcurrent. | The unit is normal, but check the following.  
• Check if indoor filters are clogged.  
• Check if refrigerant is short.  
• Check if indoor/outdoor unit air circulation is short cycled. |
| 16  | 3-time flash 2.5 seconds OFF | Frequency drop by high pressure protection | Temperature of indoor coil thermistor exceeds 55°C in HEAT mode, compressor frequency lowers. | • Check refrigerant circuit and refrigerant amount.  
• Refer to 11-5. "Check of LEV".  
• Check refrigerant circuit and refrigerant amount. |
| 17  | 4-time flash 2.5 seconds OFF | Frequency drop by defrosting in COOL mode | Indoor coil thermistor reads 8°C or less in COOL mode, compressor frequency lowers. | • Check refrigerant circuit and refrigerant amount.  
• Refer to 11-5. "Check of LEV".  
• Check refrigerant circuit and refrigerant amount. |
| 18  | Outdoor unit operates. | 7-time flash 2.5 seconds OFF | Low discharge temperature protection | Temperature of discharge temperature thermistor has been 50°C or less for 20 minutes. | • Check refrigerant circuit and refrigerant amount.  
• Refer to 11-5. "Check of LEV".  
• Check refrigerant circuit and refrigerant amount. |
| 19  | 8-time flash 2.5 seconds OFF | Zero cross detecting circuit | Zero cross signal for PAM control cannot be detected. | This is not malfunction. PAM protection will be activated in the following cases:  
1 Instantaneous power voltage drop. (Short time power failure)  
2 When the power supply voltage is high. |
| 20  | 9-time flash 2.5 seconds OFF | Inverter check mode | The connector of compressor is disconnected, inverter check mode starts. | • Check if the connector of the compressor is correctly connected.  
• Refer to 11-5. "How to check inverter/compressor". |

**NOTE:** 1. The location of LED is illustrated at the right figure. Refer to 11-6-3.  
2. LED is lighted during normal operation.  

The flashing frequency shows the number of times the LED blinks after every 2.5-second OFF.  
(Example) When the flashing frequency is "2".  

---

**Inverter P.C. board**

<table>
<thead>
<tr>
<th>Flashing</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>ON</td>
<td>0.5-second ON</td>
</tr>
<tr>
<td>OFF</td>
<td>2.5-second OFF</td>
</tr>
<tr>
<td></td>
<td>2.5-second OFF</td>
</tr>
<tr>
<td></td>
<td>0.5-second ON</td>
</tr>
</tbody>
</table>
### 11-4. Trouble criterion of main parts (1)

#### SUZ-KA25VA2.TH   SUZ-KA35VA2.TH

<table>
<thead>
<tr>
<th>Part name</th>
<th>Check method and criterion</th>
<th>Figure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defrost thermistor (RT61)</td>
<td>Measure the resistance using a tester.</td>
<td></td>
</tr>
<tr>
<td>Fin temperature thermistor (RT64)</td>
<td>Refer to 11-6. “Test point diagram and voltage”, 11-6-1. “Inverter P.C. board”, for the chart of thermistor.</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature thermistor (RT65)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature thermistor(RT68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge temperature thermistor (RT62)</td>
<td>Measure the resistance using a tester. Before measurement, hold the thermistor with your hands to warm it up. Refer to 11-6. “Test point diagram and voltage”, 11-6-1. “Inverter P.C. board”, for the chart of thermistor.</td>
<td></td>
</tr>
<tr>
<td>Compressor</td>
<td>Measure the resistance between terminals using a tester. (Temperature : -20°C ~ 40°C)</td>
<td><img src="image1" alt="Compressor Diagram" /></td>
</tr>
<tr>
<td></td>
<td><strong>SUZ-KA25VA2.TH</strong></td>
<td><strong>SUZ-KA35VA2.TH</strong></td>
</tr>
<tr>
<td></td>
<td><strong>U-V</strong></td>
<td><strong>U-W</strong></td>
</tr>
<tr>
<td></td>
<td>1.36 Ω ~ 1.93 Ω</td>
<td>1.52 Ω ~ 2.17 Ω</td>
</tr>
<tr>
<td>Outdoor fan motor</td>
<td>Measure the resistance between terminals using a tester. (Temperature : -20°C ~ 40°C)</td>
<td><img src="image2" alt="Outdoor Fan Motor Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Color of the lead wire</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td><strong>WHT - BLK</strong></td>
<td><strong>BLK - RED</strong></td>
</tr>
<tr>
<td></td>
<td>29 Ω ~ 42 Ω</td>
<td></td>
</tr>
<tr>
<td>R.V. coil (21S4)</td>
<td>Measure the resistance between terminals using a tester. (Temperature : -20°C ~ 40°C)</td>
<td><img src="image3" alt="R.V. Coil Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.19 kΩ ~ 1.78 kΩ</td>
<td></td>
</tr>
<tr>
<td>Expansion valve coil (LEV)</td>
<td>Measure the resistance using a tester. (Temperature : -20°C ~ 40°C)</td>
<td><img src="image4" alt="Expansion Valve Coil Diagram" /></td>
</tr>
<tr>
<td></td>
<td>Color of the lead wire</td>
<td>Normal</td>
</tr>
<tr>
<td></td>
<td><strong>WHT - RED</strong></td>
<td><strong>RED - ORN</strong></td>
</tr>
<tr>
<td></td>
<td>37 Ω ~ 54 Ω</td>
<td></td>
</tr>
</tbody>
</table>
### 11-4. Trouble criterion of main parts (2)

<table>
<thead>
<tr>
<th>Part name</th>
<th>Check method and criterion</th>
<th>Figure</th>
</tr>
</thead>
</table>
| **Defrost thermistor (RT61)**  
  Fin temperature thermistor (RT64)  
  Ambient temperature thermistor (RT65)  
  Outdoor heat exchanger temperature thermistor (RT68) | Measure the resistance using a tester.  
| **Discharge temperature thermistor (RT62)** | Measure the resistance using a tester.  
  Before measurement, hold the thermistor with your hands to warm it up.  
| **Compressor** | Measure the resistance between terminals using a tester.  
  (Temperature : -10°C ~ 40°C) | ![Compressor Circuit](image1) |
| | SUZ-KA50/60VA2.TH | SUZ-KA71VA2.TH | Normal | 0.86 Ω ~ 1.06 Ω | 0.92 Ω ~ 1.12 Ω |
| **Outdoor fan motor** | Measure the resistance between lead wires using a tester.  
  (Temperature : -10°C ~ 40°C) | ![Outdoor Fan Motor Circuit](image2) |
| | Color of the lead wire | Normal | 13.4 Ω ~ 16.4 Ω | 12 Ω ~ 17 Ω |
| | RED - BLK | SUZ-KA50/60VA2.TH | SUZ-KA71VA2.TH | Normal | 1.32 kΩ ~ 1.62 kΩ | 1.19 kΩ ~ 1.78 kΩ |
| **R.V. coil (21S4)** | Measure the resistance using a tester.  
  (Temperature : -10°C ~ 40°C) | ![R.V. Coil Circuit](image3) |
| | Color of the lead wire | Normal | 37.4 Ω ~ 53.9 Ω | 37 Ω ~ 54 Ω |
| | WHT - RED | SUZ-KA50/60VA2.TH | SUZ-KA70VA2.TH | Normal | 37 Ω ~ 54 Ω |  |
| **Expansion valve coil (LEV)** | Measure the resistance using a tester.  
  (Temperature : -10°C ~ 40°C) | ![Expansion Valve Coil Circuit](image4) |
| **High pressure switch (HPS)**  
  SUZ-KA60VA2.TH | Pressure | 3.7 ± 0.15 MPa | Close | 4.8 ± 0.05 MPa | Open |  |
| | WHT | LEV | WHT | LEV | WHT | LEV |  |
11-5. Troubleshooting flow

A  How to check inverter/compressor

Disconnect the connector between compressor and the intelligent power module (IPM).

Check the voltage between terminals.

Are the voltages balanced?

No  Replace the inverter P.C. board.

Yes  Check the compressor.

See B “Check of open phase”.

B  Check of open phase

With the connector between the compressor and the intelligent power module disconnected, activate the inverter and check if the inverter is normal by measuring the balance of voltage between the terminals.

The output voltage values have the tolerance of ± 20%.

<< Operation method(Test run operation)>>

1. Press the EMERGENCY OPERATION switch or the Test button to COOL or HEAT mode.
2. Test run operation starts and continues to operate for 30 minutes.
3. Compressor starts at rated frequency in COOL mode or 58Hz in HEAT mode.
4. Indoor fan operates at High speed.
5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts.
6. To cancel test run operation (EMERGENCY OPERATION), press the EMERGENCY OPERATION switch or the ON/OFF button on remote controller.

<<Measurement point>>

At 3 points
BLK (U) - WHT (V)
BLK (U) - RED (W)
WHT (V) - RED (W)

9-time flash
2.5-second OFF

NOTE: 1. Output voltage varies according to power supply voltage.
2. Measure the voltage by analog type tester.
3. During this check, LED of the inverter P.C. board flashes 9 times. (Refer to 11-6-1, 11-6-2)

C  Check of compressor

Refer to B “Check of compressor winding”. Is the compressor normal?

No  Replace the compressor.

Yes

Refer to B “Check of compressor operation time”. Does the compressor operate continuously?

No  Replace the compressor.

Yes

Is the compressor operation time more than 10 seconds?

No  OK.

Yes  Check the refrigerant circuit.
Check of compressor winding

Disconnect the connector between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

**<<Measurement point>>**
- at 3 points
  - BLK-WHT
  - BLK-RED
  - WHT-RED

**<<Judgement>>**
Refer to 11-4.
- 0 [Ω] ............... Abnormal [short]
- Infinite [Ω] ....... Abnormal [open]

**NOTE:** Be sure to zero the ohmmeter before measurement.

Check of compressor operation time

Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to over current.

**<<Operation method>>**
Start heating or cooling operation by pressing EMERGENCY OPERATION switch on the indoor unit.

**<<Method>>**
Measure the time from the start of compressor to the stop of compressor due to overcurrent.

Check of outdoor thermistors

Disconnect the connector of thermistor in the outdoor P.C. board (see below table), and measure the resistance of thermistor.

**Is the thermistor normal?**
(Refer to 11-6-1, or 11-6-2.)

**Reconnect the connector of thermistor.**
Turn ON the power supply and press EMERGENCY OPERATION switch.

**Does the unit operate for 10 minutes or more without showing thermistor abnormality?**

<table>
<thead>
<tr>
<th>Thermistor</th>
<th>Symbol</th>
<th>Connector, Pin No.</th>
<th>Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defrost</td>
<td>RT61</td>
<td>Between CN641 pin1 and pin2</td>
<td>Inverter P.C. board</td>
</tr>
<tr>
<td>Discharge temperature</td>
<td>RT62</td>
<td>Between CN641 pin3 and pin4</td>
<td></td>
</tr>
<tr>
<td>Fin temperature</td>
<td>RT64</td>
<td>Between CN642 pin1 and pin2</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>RT65</td>
<td>Between CN643 pin1 and pin2</td>
<td></td>
</tr>
<tr>
<td>Outdoor heat exchanger temp.</td>
<td>RT68</td>
<td>Between CN644 pin1 and pin3</td>
<td></td>
</tr>
</tbody>
</table>
**G  Check of R.V. coil**

First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-4.

In case CN721 is not connected or R.V. coil is open, voltage is generated between the terminal pins of the connector although any signal is not being transmitted to R.V. coil.

Check if CN721 is connected.

- **Unit operates COOL mode even if it is set to HEAT mode.**
  - Disconnect connector between the compressor and the intelligent power module.
  - Turn ON the power supply and press EMERGENCY OPERATION switch twice (HEAT mode).
  - Is there 230 VAC between CN721 and on the inverter P.C. board 3 minutes after the power supply is turned ON?
    - No: Replace the inverter P.C. board.
    - Yes: Replace the 4-way valve.

- **Unit operates HEAT mode even if it is set to COOL mode.**
  - Disconnect connector between the compressor and the intelligent power module.
  - Turn ON the power supply and press EMERGENCY OPERATION switch once (COOL mode).
  - Is there 230 VAC between CN721 and on the inverter P.C. board 3 minutes after the power supply is turned ON?
    - Yes: Replace the inverter P.C. board.
    - No: Replace the 4-way valve.

**H  Check of outdoor fan motor**

SUZ-KA25/35VA2.TH

- Disconnect CN932 from the inverter P.C. board, and measure the resistance of the outdoor fan motor.
- Is the resistance of outdoor fan motor normal? (Refer to 11-4.)
  - No: Replace the outdoor fan motor.
  - Yes: Replace the inverter P.C. board.

SUZ-KA50VA2.TH

- Check the connection between the connector CN931 and CN932.
- Is the resistance between each terminal of outdoor fan motor normal? (Refer to 11-4.)
  - Yes: Disconnect CN932 from outdoor electronic control P.C. board or the inverter P.C. board, and turn on the power supply.
    - (Fixed to either 5 or 0 VDC)
      - Does the voltage between each terminal become 5 and 0 VDC repeatedly?
        - Yes: Replace the outdoor electronic control P.C. board or the inverter P.C. board.
        - No: Replace the outdoor fan motor.
      - Does the outdoor fan motor rotate smoothly?
        - Yes: Replace the outdoor electronic control P.C. board or the inverter P.C. board.
        - No: Replace the outdoor fan motor.
### Check of power supply

1. Disconnect the connector (CN61) between compressor and intelligent power module. Turn ON power supply and press EMERGENCY OPERATION switch.

2. Rectify indoor/outdoor connecting wire.

3. Does the left lamp of OPERATION INDICATOR lamp on the indoor unit light up?
   - Yes
   - No

4. Is there voltage 280 - 370 VDC between DB61 (+) and DB61 (-) on the inverter P.C. board? (Refer to 11-6-1. or 11-6-2.)
   - Yes
   - No

5. Replace the indoor electronic control P.C. board.

6. Replace the inverter P.C. board.

7. Is there voltage 230 VAC between the indoor terminal block S1 and S2?
   - Yes
   - No

8. Replace the indoor electronic control P.C. board.


10. Replace the indoor electronic control P.C. board.

### Check of LEV

(For wireless remote controller use model)

1. Turn ON the power supply.

2. **Preparation of the remote controller**
   - While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
   - First, release RESET button. And release the other two buttons after all LCD except the set temperature in operation display section of the remote controller is displayed after 3 seconds.

3. Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit.

4. Expansion valve operates in full-opening direction.

5. Do you hear the expansion valve "click, click----танк"?
   - Yes
   - OK
   - No

6. Do you feel the expansion valve vibrate on touching it?
   - Yes
   - No

7. Is LEV coil properly fixed to the expansion valve?
   - Yes
   - No

8. Properly fix the LEV coil to the expansion valve.

9. Measure each voltage between connector pins of CN724 on the inverter P.C. board.
   - Pin(3) — Pin(8)
   - Pin(4) — Pin(9)
   - Pin(5) — Pin(10)
   - Pin(6) — Pin(11)

10. Is there about 3 ~ 5 VAC between each?
    - Yes
    - No

11. Replace the LEV coil.

12. Replace the expansion valve.

### NOTE

- After check of LEV, do the undermentioned operations.
  1. Turn OFF the power supply and turn ON it again.
  2. Press RESET button on the remote controller.
Check of LEV  
(For wired remote controller use model)

Start

Turn on power supply to the outdoor unit after checking LEV coil is fixed to the LEV body securely.

Yes  → Normal

Is "click - click" sound heard?
Or, do you feel vibration of the LEV coil with a hand?

No

Disconnect the connector CN724 is there normal resistance to LEV coil?

Yes  → Replace the inverter P.C. board.

No

Replace the LEV coil.

Check of inverter P.C. board

Check the outdoor fan motor.  
(Refer to J.)

Is the fuse (F901) blown on the inverter P.C. board?

Yes

No

Check the connection of the connectors (CN931, CN932) of the outdoor fan motor.
If the connection is poor, make it correct.

Operate the outdoor unit by starting EMERGENCY OPERATION.

Check the LED indication on the inverter P.C. board.
Does the LED flash 10 times?

Yes (10-time flash)

No

Check the corresponding parts following LED indication.  
(Refer to 11-3.)

Replace the inverter P.C. board.
How to check miswiring and serial signal error

(For wireless remote controller use model)

1. Miswiring may damage indoor electronic control P.C. board during the operation.
   Be sure to confirm the wiring is correct before the operation starts.
2. Be careful of the residual voltage of smoothing capacitor.
3. Be sure to check this within 3 minutes after turning ON. After 3 minutes, LED blinks 6 times. Even when the inverter P.C. board or the outdoor electronic control P.C. board is normal, LED blinks 6 times after 3 minutes.

A
- Turn OFF inverter-controlled lighting equipment.
- Turn OFF the power supply and then turn ON again.
- Press EMERGENCY OPERATION switch.

B
- Reinstall either the unit or the light away from each other.
- Attach a filter on remote control receiving section of the indoor unit.

As for indoor unit.
**How to check miswiring and serial signal error** (For wired remote controller use model)

1. **Turn OFF the power supply.**
   - Is there rated voltage in the power supply?
     - No: Check the power supply.
     - Yes: Turn ON the power supply.

2. **Is there rated voltage between outdoor terminal block S1 and S2?**
   - No: Check the wiring.
   - Yes: Press TEST button once.

3. **Does the left lamp of OPERATION INDICATOR lamp light up?**<br>   - **Confirmation of the power to the indoor unit**
   - Yes: Is serial signal error indicated 6 minutes later?
     - No: Correct them.
     - Yes: A

   **A**
   - Turn OFF the power supply.
   - Check once more if the indoor/outdoor connecting wire is not miswiring.
   - Short-circuit outdoor terminal block S2 and S3.

   1. Miswiring may damage indoor electronic control P.C. board during the operation. Be sure to confirm the wiring is correct before the operation starts.
   2. Be careful of the residual voltage of smoothing capacitor.

   **B**
   - Turn ON the power supply.
   - Does the LED on the inverter P.C. board or the outdoor electronic control P.C. board repeat "3.6-second-OFF and 0.8-second-ON quick blinking"?
     - No: Replace the inverter P.C. board or the outdoor electronic control P.C. board.
     - (Lit or not lit)

   **As for indoor unit.**
   - Turn OFF inverter-controlled lighting equipment.
   - Turn OFF the power supply and then turn ON again.
   - Press EMERGENCY OPERATION switch.

   **A**
   - Is serial signal error indicated 6 minutes later?
     - Yes: Reinstall either the unit or the light away from each other.
     - No: Attach a filter on remote control receiving section of the indoor unit.

   **B**
   - Is there amplitude of 10 to 20 VDC between outdoor terminal block S2 and S3? <Confirmation of serial signal>
     - No: Replace the indoor/outdoor connecting wire.
     - Yes: Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
       - No: Replace the indoor/outdoor connecting wire.
       - Yes: Replace the indoor electronic control P.C. board.

Be sure to release the failure-mode recall function after checking.
**Electromagnetic noise enters into TV sets or radios**

1. **Is the unit earthed?**
   - Yes
   - No Earth the unit.

2. **Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m?**
   - Yes
   - No Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.

3. **Is the distance between the TV sets or radios and the indoor unit within 1 m, or is the distance between the TV sets or radios and the outdoor unit within 3 m?**
   - Yes Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.

4. **Are the antennas damaged?**
   - Yes Replace or repair the antenna.
   - No Replace or repair the coaxial cable.

5. **Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?**
   - Yes Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
   - No

---

Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).

Check the following before asking for service.

1. Devices affected by the electromagnetic noise
   - TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   - Indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.
Outdoor unit does not operate. (LED display: display OFF)

**Check of power supply**

1. **Start**
   - Check the connecting of parts of main power supply circuit.
2. Turn on power supply.
3. Is there voltage of 230V AC in the power supply terminal block?
   - No: Check the power supply cable.
   - Yes: Is the output voltage from the noise filter P.C. board 230V AC?
     - No: Is fuse (F64) blown?
       - No: Replace the noise filter P.C. board.
       - Yes: Replace the fuse.
     - Yes: Is the input voltage to the outdoor electronic control P.C. board 325V DC?
       - No: Replace the reactor.
       - Yes: Replace the reactor.
5. Replace the outdoor electronic control P.C. board.
• When unit cannot operate neither by the remote controller nor by EMERGENCY OPERATION switch.
  Indoor unit does not operate.
• Outdoor unit does not operate.

How to check miswiring and serial signal error (when outdoor unit does not work)

(For wireless remote controller use model)

- Turn OFF inverter-controlled lighting equipment.
- Turn OFF the power supply and then turn ON again.
- Press EMERGENCY OPERATION switch.

- Make them correct.
- Be careful of the residual voltage of smoothing capacitor.
- Replace the indoor/outdoor connecting wire.
- Replace the indoor electronic control P.C. board.
- Replace the inverter P.C. board or the outdoor electronic control P.C.board.

- Be sure to release the failure-mode recall function after checking.
• When unit cannot operate neither by the remote controller.
  Indoor unit does not operate.
  Outdoor unit does not operate.

How to check miswiring and serial signal error (when outdoor unit does not work)
(For wired remote controller use model)

Turn OFF the power supply.

Is there rated voltage in the power supply?
  No: Check the power supply.
  Yes: Turn ON the power supply.

Is there rated voltage between outdoor terminal block S1 and S2?
  No: Check the wiring.
  Yes: Press TEST button twice.

Does the left lamp of OPERATION INDICATOR lamp on remote controller light up?
  No: Make them sure.
  Yes: Is the self-check of the remote controller displayed 6 minutes after?

Serial signal error display
  The left lamp of OPERATION INDICATOR lamp blinks.
  Yes: A
  No: B

Turn OFF the power supply. Check once more if the indoor/outdoor connecting wire is not mis-wiring.

Short-circuit outdoor terminal block is S2 and S3.

1. Miswiring may damage indoor electronic control P.C. board during the operation.
   Be sure to confirm the wiring is correct before the operation starts.

2. Be sure to check this within 3 minutes after turning ON. After 3 minutes, LED blinks 6 times. Even when the inverter P.C.board or the outdoor electronic control P.C.board is normal, LED blinks 6 times after 3 minutes.

Turn ON the power supply.

Does the LED on the inverter P.C. board or the outdoor electronic control P.C.board repeat "3.6-second-OFF and 0.8-second-quick blinking"?
  No: Replace the inverter P.C.board or the outdoor electronic control P.C.board.
  Yes: Replace the inverter P.C.board or the outdoor electronic control P.C.board. Be careful of the residual voltage of smoothing capacitor.

Turn OFF the power supply. Remove the short-circuit between outdoor terminal block S2 and S3.

Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
  Yes: Replace the indoor/outdoor connecting wire.
  No: Replace the indoor/outdoor connecting wire.

Is there rated voltage between indoor terminal block S1 and S2? 
  No: <Confirmation of power voltage>
  Yes: Is there rated voltage between indoor terminal block S1 and S2? 

Is there any error of the indoor/outdoor connecting wire, such as the damage of the wire, intermediate connection, poor contact to the terminal block?
  Yes: Replace the indoor/outdoor connecting wire.
  No: Replace the indoor/outdoor connecting wire.

How to check miswiring and serial signal error (when indoor unit does not work)
(For wired remote controller use model)

Turn OFF inverter-controlled lighting equipment.
Turn OFF the power supply and then turn ON again.
Press TEST button twice.

Is serial signal error indicated 6 minutes later?
  No: Reinstall the unit away from inverter-controlled lighting equipment. Attach a filter on receiving section of the indoor unit.
  Yes: Replace the indoor electronic control P.C. board.

Be sure to release the failure-mode recall function after checking.
The cooling operation or heating operation does not operate. (LED display: Both LED1 and LED2 lighting)

P Check of R.V. coil

* When heating operation does not work.

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in HEAT mode.

Is there voltage of 230V AC between pin 1 and pin 2 at connector CN912? *

Yes

Turn off power supply of indoor and outdoor unit.

No

Is there voltage 12V DC between the connector CN781 pin 5 (+) and pin 3 (-)?

Yes

Replace the R.V. coil.

No

Replace the 4-way valve.

Replace the noise filter P.C. board.

1. Turn off power supply of indoor and outdoor unit, and disconnect the connector CN781 in the outdoor electronic control P.C. board.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in HEAT mode.

* If the connector CN912 is not connected or R.V. coil is open, voltage occurs between terminals even when the control is OFF.

* When cooling operation does not work.

1. Disconnect the lead wire leading to the compressor.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in COOL mode.

Is there voltage of 230V AC between pin 1 and pin 2 at connector CN912? *

Yes

Replace the 4-way valve.

No

1. Turn off power supply of indoor and outdoor unit, and disconnect the connector CN781 in the outdoor electronic control P.C. board.
2. 3 minutes after turning on the power supply, start EMERGENCY OPERATION in COOL mode.

Is there voltage 12V DC between the connector CN781 pin 5 (+) and pin 3 (-)?

Yes

Replace the noise filter P.C. board.

No

Replace the outdoor electronic control P.C. board.
• When cooling, heat exchanger of non-operating indoor unit frosts.
• When heating, non-operating indoor unit get warm.

Q: Check of LEV

LED display:

<table>
<thead>
<tr>
<th></th>
<th>LED1</th>
<th>LED2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lighting</td>
<td>Lighting</td>
</tr>
<tr>
<td>6 time</td>
<td>Goes out</td>
<td></td>
</tr>
</tbody>
</table>

Turn on power supply to the outdoor unit after checking LEV coil is mounted to the LEV body securely.

Is "click - click" sound heard?  
Or, do you feel vibration of the LEV coil with a hand?  
Yes, Normal  
No

Disconnect the connector CN795.  
Is there normal resistance to LEV coil?  
Yes, Replace the outdoor electronic control P.C. board.  
No, Replace the LEV coil.

R: How to check inverter/ compressor

LED display:

<table>
<thead>
<tr>
<th></th>
<th>LED1</th>
<th>LED2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lighting</td>
<td>Lighting</td>
</tr>
<tr>
<td>Twice</td>
<td>Goes out</td>
<td></td>
</tr>
</tbody>
</table>

Disconnect the terminal of the compressor. 3 minutes after turning on the power supply, start EMERGENCY OPERATION.

Measure the voltage between each lead wire leading to the compressor.  
U (BLK) - V (WHT)  
V (WHT) - W (RED)  
W (RED) - U (BLK)  
Is voltage output on right table?  
Yes

* • After the outdoor fan starts running, wait for 1 minutes or more before measuring the voltage.  
• The output voltage values have the tolerance of ±20%.

Is output balanced?  
No

Is the input voltage to the outdoor electronic control P.C. board 370V or more?  
No, Replace the power board.  
Yes

Turn off power supply of indoor and outdoor unit, and measure the compressor winding resistance between the compressor terminals.  
Is the resistance between each terminal normal?  
Yes

Reconnect the lead wire of compressor, and turn on power supply to indoor and outdoor unit.  
3 minutes later, starts EMERGENCY OPERATION.

Clarify the causes by counting time until the inverter stops.  
0 to 10 seconds: compressor rare short  
10 to 60 seconds: compressor lock  
60 seconds to 5 minutes: refrigerant circuit defective  
5 minutes or more: normal
• When thermistor is abnormal.

**Check of outdoor thermistors**

Disconnect the connector in the outdoor electronic control P.C. board or the outdoor power board (see below table), and measure the resistance of thermistor. Is the thermistor normal?

No

Reconnect the connector CN661 on the outdoor electronic control P.C. board and CN3 on the power board, and disconnect the lead wire leading to the compressor. 3 minutes after turning on the power supply, start (EMERGENCY) OPERATION.

Does thermistor operate 10 minutes or more though the thermistor abnormality is not displayed? No

Replace the outdoor electronic control P.C. board.

Yes

Normal

<table>
<thead>
<tr>
<th>Thermistor</th>
<th>Symbol</th>
<th>Connector, Pin No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defrost thermistor</td>
<td>RT61</td>
<td>Between CN661 pin1 and pin2 on the outdoor electronic control P.C. board</td>
</tr>
<tr>
<td>Discharge temperature thermistor</td>
<td>RT62</td>
<td>Between CN661 pin3 and pin4 on the outdoor electronic control P.C. board</td>
</tr>
<tr>
<td>Outdoor heat exchanger temperature thermistor</td>
<td>RT64</td>
<td>Between CN661 pin7 and pin8 on the outdoor electronic control P.C. board</td>
</tr>
<tr>
<td>Fin temperature thermistor</td>
<td>RT64</td>
<td>Between CN663 pin1 and pin2 on the outdoor electronic control P.C. board</td>
</tr>
<tr>
<td>Ambient temperature thermistor</td>
<td>RT65</td>
<td>Between CN663 pin1 and pin2 on the outdoor electronic control P.C. board</td>
</tr>
</tbody>
</table>

• Fan motor does not operate or stops operating shortly after starting the operation.

**Check of outdoor fan motor**

Start

Check the connection between the connector CN931 and CN932.

Is the resistance between each terminal of outdoor fan motor normal? Yes

Disconnect CN932 from outdoor electronic control P.C. board, and turn on the power supply.

Rotate the outdoor fan motor manually and measure the voltage of CN931.

- Between \((+\text{)}\) and \((-\text{)}\)
- Between \((+\text{)}\) and \((-\text{)}\)
- Between \((+\text{)}\) and \((-\text{)}\)

Does the voltage between each terminal become 5V DC and 0V DC repeatedly?

- Yes

Replace the outdoor electronic control P.C. board.

- No

Replace the outdoor DC fan motor.

(Fixed to either 5V or 0V DC)
• When the operation frequency does not go up from lowest frequency.

**Check of HPS**

1. Disconnect the connector CN681 in the electronic control P.C. board.
2. Check the resistance of HPS after 1 minute has passed since the outdoor unit power supply was turned off.

   - **Check the resistance between each terminal.**
     - **Infinity:** Replace HPS.
     - **0Ω:** Reconnect CN681. Turn on power supply to the indoor and outdoor unit. 3 minutes later, starts EMERGENCY OPERATION.

   - **Is HPS protection displayed immediately after compressor starts?**
     - **Yes:** Replace the electronic control P.C. board.
     - **No:** Normal

• Outdoor unit does not operate at all, or stops immediately due to overcurrent.

**Check of current-limiting resistor**

When the current-limiting resistor is open, the rush current limiting relay (X64) may not work properly.

- **Is the resistance of current-limiting resistor (R64A or R64B) on the noise filter P.C. board normal?** (Normal resistance: 5Ω ±5%)
  - **Open:** Replace the power P.C. board.
  - **Not open:** Turn ON the power supply and press EMERGENCY OPERATION switch.

- **Does LED on the outdoor electronic control P.C. board light up?**
  - **Yes:** Does the rush current limiting relay (X64) work properly?
    - **Yes:** Replace the noise filter P.C. board or the outdoor electronic control P.C. board.
    - **No:** Replace the outdoor electronic control P.C. board or power P.C. board or the compressor.
  - **No:** Replace the noise filter P.C. board.
**How to check inverter/compressor**

- Disconnect the connector between the compressor and the intelligent power module (IPM).
- Check the voltage between terminals. See 11-5. @ “Check of open phase”.
- Are the voltages balanced? Yes
  - Check the compressor. See 11-5. @ “Check of compressor”.
- No
  - Replace the inverter P.C. board.

**Check of open phase**

- With the connector between the compressor and the intelligent power module disconnected, activate the inverter and check if the inverter is normal by measuring the balance of voltage between the terminals.
- Output voltage is 50 - 130 V. (The voltage may differ according to the tester.)
- << Operation method (Test run operation)>>
  1. Press EMERGENCY OPERATION switch to start COOL or HEAT mode (COOL: Press once, HEAT: Press twice).
  2. Test run operation starts and continues to operate for 30 minutes.
  3. Compressor operates at rated frequency in COOL mode or 74 Hz in HEAT mode.
  4. Indoor fan operates at High speed.
  5. After 30 minutes, test run operation finishes and EMERGENCY OPERATION starts (operation frequency of compressor varies).
  6. To cancel test run operation (EMERGENCY OPERATION), press EMERGENCY OPERATION switch or any button on remote controller.
- << Measurement point >>
  - At 3 points
  - BLK (U)-WHT (V)
  - BLK (U)-RED (W)
  - WHT (V)-RED (W)
  - ※ Measure AC voltage between the lead wires at 3 points.

**Check of compressor**

- Refer to 11-5. @ “Check of compressor winding”.
  - Is the compressor normal? Yes
  - Refer to 11-5. @ “Check of compressor operation time”.
  - Does the compressor operate continuously? Yes
    - OK.
  - No
    - Refer to 11-5. @ “Check of compressor start failure”.
  - Replace the compressor.
(d) Check of compressor winding

- Disconnect the connector between the compressor and intelligent power module, and measure the resistance between the compressor terminals.

<<Measurement point>>
- at 3 points
  - BLK-WHT
  - BLK-RED
  - WHT-RED

※ Measure the resistance between the lead wires at 3 points.

<<Judgement>>
- Refer to 11-4.
- 0 [Ω] ················ Abnormal [short]
- Infinite [Ω] ······· Abnormal [open]

NOTE: Be sure to zero the ohmmeter before measurement.

(e) Check of compressor operation time

- Connect the compressor and activate the inverter. Then measure the time until the inverter stops due to over current.

<<Operation method>>
- Start heating or cooling operation by pressing EMERGENCY OPERATION switch on the indoor unit. (TEST RUN OPERATION: Refer to 11-5 ⑤.)

<<Measurement>>
- Measure the time from the start of compressor to the stop of compressor due to overcurrent.

(f) Check of compressor start failure

Confirm that ①~⑥ is normal.

- Electrical circuit check
  ①. Contact of the compressor connector
  ②. Output voltage of inverter P.C. board and balance of them (See 11-5 ⑥.)
  ③. Direct current voltage between JP715(+) and JP30(-) on the inverter P.C.board
  ④. Voltage between outdoor terminal block S1-S2

Does the compressor run for 10 seconds or more after it starts?

Yes → Check the refrigerant circuit. Check the stop valve.

No → Does the compressor start? ①

After the compressor is heated with a drier, does the compressor start? ①

Yes → Compressor start failure. Activate pre-heat control.

No → Replace the compressor.

① Heat the compressor with a drier for about 20 minutes. Do not recover refrigerant gas while heating.
9 Check of outdoor thermistors

Check of R.V. coil

First of all, measure the resistance of R.V. coil to check if the coil is defective. Refer to 11-4.
* In case CN602 is disconnected or R.V. coil is open, voltage is generated between the terminal pins of the connector although no signal is being transmitted to R.V. coil.
Check if CN602 is connected.

Unit operates COOL mode even if it is set to HEAT mode.

Unit operates HEAT mode even if it is set to COOL mode.
### Check of outdoor fan motor

1. Disconnect the connectors CN931 and CN932 from the inverter P.C. board. Check the connection between the connector CN931 and CN932.

2. Is the resistance between each terminal of outdoor fan motor normal? (Refer to 11-4.)
   - Yes
     - Disconnect CN932 from the inverter P.C. board, and turn on the power supply.
     - Rotate the outdoor fan motor manually and measure the voltage of CN931. Between 1(+) and 5(-)
       - Does the voltage between each terminal become 5 and 0 VDC repeatedly?
         - Yes
         - Does the outdoor fan motor rotate smoothly?
           - Yes
           - Replace the outdoor fan motor.
           - No
           - Replace the inverter P.C. board.
         - No
         - Replace the outdoor fan motor.
     - No
       - (Fixed to either 5 or 0 VDC)

### Check of power supply

1. Disconnect the connector between compressor and intelligent power module. Turn ON power supply and press EMERGENCY OPERATION switch.

2. Does the upper lamp of OPERATION INDICATOR on the indoor unit light up?
   - Yes
     - Rectify indoor/outdoor connecting wire.
   - No
     - Is there voltage 230 VAC between the indoor terminal block S1 and S2?
       - Yes
         - Replace the indoor electronic control P.C. board.
       - No
         - Is there bus-bar voltage 325 - 370 VDC between JP715 (+) and JP30 (-) on the inverter P.C. board? (Refer to 11-6.3.)
           - Yes
             - Dose LED on the inverter P.C. board light up or flash? (Refer to 11-6.3.)
               - Yes
                 - Replace the inverter P.C. board.
               - No
                 - Check the electric parts in main circuit.
           - No
             - If light up, OK. If flash, refer to 11-3.
**Check of LEV** (For wireless remote controller use model)

Turn ON the power supply.

- While pressing both OPERATION SELECT button and TOO COOL button on the remote controller at the same time, press RESET button.
- First, release RESET button. And release the other two buttons after all LCD except the set temperature in operation display section of the remote controller is displayed after 3 seconds.

Press OPERATE/STOP (ON/OFF) button of the remote controller (the set temperature is displayed) with the remote controller headed towards the indoor unit. ※1

Expansion valve operates in full-opening direction.

Do you hear the expansion valve "click, click……..."? Do you feel the expansion valve vibrate on touching it?

Yes → OK

No

Is LEV coil properly fixed to the expansion valve?

Yes

Does the resistance of LEV coil have the characteristics? (Refer to 11-4.)

Yes

Measure each voltage between connector pins of CN724 on the inverter P.C. board.
1. Pin3(+) — Pin1(+)
2. Pin2(+) — Pin1(+)
3. Pin3(+) — Pin1(+)
4. Pin3(+) — Pin1(+)

Is there about 3 - 5 VAC between each?

Note: Measure the voltage by an analog tester.

Yes

Replace the LEV coil.

No

Replace the expansion valve.

No

Replace the inverter P.C. board.

※1. Regardless of normal or abnormal condition, a short beep is emitted once the signal is received.

**Check of LEV** (For wired remote controller use model)

Start

Turn on power supply to the outdoor unit after checking LEV coil is fixed to the LEV body securely.

Yes → Normal

Is "click - click" sound heard? Or, do you feel vibration of the LEV coil with a hand?

No

Disconnect the connector CN724 is there normal resistance to LEV coil?

Yes → Replace the inverter P.C. board.

No

Replace the LEV coil.
Check the outdoor fan motor.
(Refer to 11-5. i.)

- Is the fuse (F901) blown on the inverter P.C. board?
  - Yes
  - No

  Check the connection of the connectors (CN931, CN932) of the outdoor fan motor. If the connection is poor, make it correct.

- Operate the outdoor unit by starting EMERGENCY OPERATION.

- Check the LED indication on the inverter P.C. board. Does the LED flash 10 times?
  - Yes (10-time flash)
  - No

  Check the corresponding parts following LED indication.
  (Refer to 11-3.)

- Replace the inverter P.C. board.
How to check miswiring and serial signal error

1. Turn OFF inverter-controlled lighting equipment.
2. Turn OFF the power supply and then turn ON again.
3. Press EMERGENCY OPERATION switch.

A
1. Is serial signal error indicated 6 minutes later?
   - Yes
   - No

B
1. Is there rated voltage in the power supply?
   - Yes
   - No
2. Check the power supply.
3. Turn ON the power supply.
4. Is there rated voltage between outdoor terminal block S1 and S2?
   - Yes
   - No
5. Check the wiring.
6. Press EMERGENCY OPERATION switch once.
7. Does the upper lamp of OPERATION INDICATOR lamp light up? <Confirmation of the power to the indoor unit>
   - Yes
   - No
8. Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
   - Yes
   - No
9. Correct them.
10. A
11. Turn OFF the power supply. Check once more if the indoor/outdoor connecting wire is not miswiring.
12. Short-circuit outdoor terminal block S2 and S3. #1
13. B
14. Does the LED on the inverter P.C. board repeat “3.6-second-OFF and 0.8-second-ON quick blinking”? #3
   - Yes
   - No (Lighted or not lighted)
15. Replace the inverter P.C. board. #2
16. Turn OFF the power supply.
17. Does the bus-bar voltage of the inverter P.C. board normal? (Refer to "TEST POINT DIAGRAM AND VOLTAGE" of the outdoor unit.)
   - Yes
   - No
18. Replace the indoor electronic control P.C. board.
19. Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
   - Yes
   - No
20. Correct them.
21. A
22. Turn OFF the power supply.
23. Is serial signal error indicated 6 minutes later?
   - Yes
   - No
24. B
25. Is there rated voltage in the power supply?
   - Yes
   - No
26. Check the power supply.
27. Turn ON the power supply.
28. Is there rated voltage between outdoor terminal block S1 and S2?
   - Yes
   - No
29. Check the wiring.
30. Press EMERGENCY OPERATION switch once.
31. Does the upper lamp of OPERATION INDICATOR lamp light up? <Confirmation of the power to the indoor unit>
   - Yes
   - No
32. Is there any miswiring, poor contact, or wire disconnection of the indoor/outdoor connecting wire?
   - Yes
   - No
33. Correct them.
34. A
35. Turn OFF the power supply. Check once more if the indoor/outdoor connecting wire is not miswiring.
36. Short-circuit outdoor terminal block S2 and S3. #1
37. B
38. 1. Miswiring may damage indoor electronic control P.C. board during the operation. Be sure to confirm the wiring is correct before the operation starts.
39. 2. Be careful of the residual voltage of smoothing capacitor.
40. 3. Be sure to check this within 3 minutes after turning ON. After 3 minutes, LED blinks 6 times. Even when the inverter P.C. board is normal, LED blinks 6 times after 3 minutes.
41. Turn OFF the power supply.
42. Remove the short-circuit between outdoor terminal block S2 and S3.
43. Replace the indoor electronic control P.C. board.
### Electromagnetic noise enters into TV sets or radios

1. **Is the unit earthed?**
   - Yes
   - No
     - Earth the unit.

2. **Is the distance between the antennas and the indoor unit within 3 m, or is the distance between the antennas and the outdoor unit within 3 m?**
   - Yes
   - No
     - Extend the distance between the antennas and the indoor unit, and/or the antennas and the outdoor unit.

3. **Is the distance between the TV sets or radios and the indoor unit within 1 m, or is the distance between the TV sets or radios and the outdoor unit within 3 m?**
   - Yes
   - No
     - Extend the distance between the TV sets and/or radios and the indoor unit, or the TV sets or radios and the outdoor unit.

4. **Are the antennas damaged?**
   - Yes
     - Replace or repair the antenna.
   - No
     - Is the coaxial cable damaged?
       - Yes
         - Replace or repair the coaxial cable.
       - No

5. **Is the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas close?**
   - Yes
     - Extend the distance between the indoor/outdoor connecting wire of the air conditioner and the wiring of the antennas.
   - No

---

Even if all of the above conditions are fulfilled, the electromagnetic noise may enter, depending on the electric field strength or the installation condition (combination of specific conditions such as antennas or wiring).

Check the following before asking for service.

1. Devices affected by the electromagnetic noise
   - TV sets, radios (FM/AM broadcast, shortwave)
2. Channel, frequency, broadcast station affected by the electromagnetic noise
3. Channel, frequency, broadcast station unaffected by the electromagnetic noise
4. Layout of:
   - Indoor/outdoor unit of the air conditioner, indoor/outdoor wiring, earth wire, antennas, wiring from antennas, receiver
5. Electric field intensity of the broadcast station affected by the electromagnetic noise
6. Presence or absence of amplifier such as booster
7. Operation condition of air conditioner when the electromagnetic noise enters in
   1) Turn OFF the power supply once, and then turn ON the power supply. In this situation, check for the electromagnetic noise.
   2) Within 3 minutes after turning ON the power supply, press OPERATE/STOP (ON/OFF) button on the remote controller for power ON, and check for the electromagnetic noise.
   3) After a short time (3 minutes later after turning ON), the outdoor unit starts running. During operation, check for the electromagnetic noise.
   4) Press OPERATE/STOP (ON/OFF) button on the remote controller for power OFF, when the outdoor unit stops but the indoor/outdoor communication still runs on. In this situation, check for the electromagnetic noise.
11-6. Test point diagram and voltage
11-6-1. Inverter P.C. board
SUZ-KA25VA2.TH  SUZ-KA35VA2.TH

**Back side of unit**
- AC 230 V
- DB61 DC 260 - 300 V
- Fuse (F701) 250 V 3.15 A
- R.V. coil (CN721) 230 VAC

**Front side of unit**
- Output to drive outdoor fan motor (LDU, LDV, LDW)
- LED monitor lamp
- Jumper wire for changing defrost setting (JS)
- AC 230 V

**Graphs**
- Defrost thermistor (RT61)
- Ambient temperature thermistor (RT65)
- Outdoor heat exchanger temperature thermistor (RT68)
- Discharge temperature thermistor (RT62)
- Fin temperature thermistor (RT64)
11-6-2. Inverter P.C. board
SUZ-KA50VA2.TH

**Back side of unit**

- AC 230 V
- DB61 DC 260 ~300 V
- Fuse (F701) 250 V 3.15 A
- Fuse (F801) 250 V 3.15 A
- Fuse (F901) 250 V 3.15 A
- R.V.coil (CN721) 230 VAC
- Front side of unit

- AC 230 V
- Output to drive compressor (LDU, LDV, LDW)
- DB61
- DC 260 ~300 V

**Front side of unit**

- Fin temperature thermistor (RT64)
- Outdoor heat exchanger temperature thermistor (CN644)
- Ambient temperature thermistor (CN643)
- Defrost thermistor (CN641)
- Discharge temperature thermistor (CN641)
- Defrost thermistor (RT61)
- Ambient temperature thermistor (RT65)
- Outdoor heat exchanger temperature thermistor (RT68)

**Resistance vs. Temperature**

- Fin temperature thermistor (RT64)
- Discharge temperature thermistor (RT62)
- Defrost thermistor (RT61)
- Ambient temperature thermistor (RT65)
- Outdoor heat exchanger temperature thermistor (RT68)
11-6-3. Inverter P.C. board
SUZ-KA71VA2.TH

- Fuse (F62) T2.0AL250V
- Fuse (F601) T3.15AL250V
- R.V. coil (CN602) 230VAC
- Jumper wire for changing defrost setting (JS)
- Jumper wire for pre-heat control setting (JK)
- Defrost thermistor/RT61 (CN671)
- Discharge temperature thermistor/RT62 (CN671)
- Outdoor heat exchanger temperature thermistor/RT68 (CN671)
- Ambient temperature thermistor/RT65 (CN672)
- Fin temperature thermistor/RT64 (CN673)
- LED
- Signal of outdoor fan motor (CN931)
- Output to drive outdoor fan motor (CN932)
- Fuse (F880) T3.15AL250V
- LEV connector (CN724)

Graphs:
- Resistance vs. Temperature
- Resistance vs. Temperature
11-6-4. Outdoor electronic control P.C. board
SUZ-KA60VA2.TH

Discharge temperature thermistor (RT62)

Defrost thermistor (RT61)
Ambient temperature thermistor (RT65)
Outdoor heat exchanger temperature thermistor (RT68)

Fin temperature thermistor (RT64)
11-6-5. Noise filter P.C. board
SUZ-KA60VA2.TH

CN912
R.V. coil
230V AC

CN901
To electronic control P.C. board

CN902
CN903
To power To power board

F64 FUSE
2A/250V

F911 FUSE
1A/250V

NR64 VARISTOR

230V AC 50Hz Output

230V AC 50Hz Input

230V AC 50Hz Output
11-6-6. Outdoor power board
SUZ-KA60VA2.TH

- 325-370V DC Output
  - (+): Red
  - (-): White

- Connect to the compressor
- Voltage among phases: 5V to 180V
- Connect to the earth
- CN2: Connect to the controller board
  - (+)1-5(–): Signal transmission
    - (To electronic control P.C. board)
    - 5V DC pulse wave
  - (+)2-5(–): Zero cross signal
  - (+)6-5(–): 15V
  - (+)7-5(–): 15V

- CN3: Fin temperature thermistor RT64
- Signal reception (From electronic control P.C. board)
  - 5V DC pulse wave
- CN5: Primary current detection
  - (Connect to the noise filter)
12 DISASSEMBLY INSTRUCTIONS

<"Terminal with locking mechanism" Detaching points>
The terminal which has the locking mechanism can be detached as shown below. There are two types (Refer to (1) and (2)) of the terminal with locking mechanism. The terminal without locking mechanism can be detached by pulling it out. Check the shape of the terminal before detaching.

(1) Slide the sleeve and check if there is a locking lever or not.

(2) The terminal with this connector has the locking mechanism.

NOTE: Turn OFF power supply before disassembling.

SUZ-KA25VA2.TH SUZ-KA35VA2.TH OUTDOOR UNIT

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<td><strong>Photo 1</strong></td>
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<td>(1) Remove the screw fixing the service panel.</td>
<td>Screws of the top panel</td>
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<td>(2) Pull down the service panel and remove it.</td>
<td>Screws of the top panel</td>
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<tr>
<td>(3) Disconnect the power supply and indoor/outdoor connecting wire.</td>
<td></td>
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<tr>
<td>(4) Remove the screws fixing the top panel.</td>
<td></td>
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<td>(5) Remove the top panel.</td>
<td></td>
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<tr>
<td>(6) Remove the screws fixing the cabinet.</td>
<td></td>
</tr>
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<td>(7) Remove the cabinet.</td>
<td></td>
</tr>
<tr>
<td>(8) Remove the screws fixing the back panel.</td>
<td></td>
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<td>(9) Remove the back panel.</td>
<td></td>
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</table>

**Photo 2**

- Screw of the cabinet
- Screw of the service panel
- Direction to remove
- Hooks
- Screws of the cabinet
- Back panel
- Service panel
## OPERATING PROCEDURE

### 2. Removing the inverter assembly, inverter P.C. board

1. Remove the cabinet and panels. (Refer to 1.)
2. Disconnect the lead wire to the reactor and the following connectors:
   - CN721 (R.V. coil)
   - CN932 (Fan motor)
   - CN641 (Defrost thermistor and discharge temperature thermistor)
   - CN643 (Ambient temperature thermistor)
   - CN644 (Outdoor heat exchanger temperature thermistor)
   - CN724 (LEV)
3. Remove the compressor connector (CN61).
4. Remove the screws fixing the relay panel. (Photo 3)
5. Remove the inverter assembly. (Photo 4)
6. Remove the screw of the earth wire and screw of the T.B.support. (Photo 4)
7. Remove the relay panel from the inverter assembly.
8. Remove the inverter P.C. board from the relay panel.

### 3. Removing R.V. coil

1. Remove the cabinet and panels. (Refer to 1.)
2. Disconnect the following connectors:
   - CN721 (R.V. coil)
3. Remove the R.V. coil. (Photo 5)

### 4. Removing the discharge temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor

1. Remove the cabinet and panels. (Refer to 1.)
2. Disconnect the lead wire to the reactor and the following connectors:
   - CN641 (Defrost thermistor and discharge temperature thermistor)
   - CN643 (Ambient temperature thermistor)
   - CN644 (Outdoor heat exchanger temperature thermistor)
3. Pull out the discharge temperature thermistor from its holder. (Photo 5)
4. Pull out the defrost thermistor from its holder. (Photo 6)
5. Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 6)
6. Pull out the ambient temperature thermistor from its holder.

## PHOTOS

**Photo 3**

Screws of the relay panel

**Photo 4 (Inverter assembly)**

Heat sink

Inverter P.C. board

Screw of the T.B.support

T.B.support

**Photo 5**

R.V. coil

Discharge temperature thermistor

Relay panel

Screw of the earth wire
### OPERATING PROCEDURE

#### 5. Removing outdoor fan motor

1. Remove the cabinet and panels. (Refer to 1.)
2. Disconnect the following connectors:
   - Inverter P.C. board: CN932 (Fan motor)
3. Remove the propeller nut. (Photo 7)
4. Remove the propeller. (Photo 7)
5. Remove the screws fixing the fan motor. (Photo 7)
6. Remove the fan motor.

#### 6. Removing the compressor and 4-way valve

1. Remove the cabinet and panels. (Refer to 1.)
2. Remove the inverter assembly. (Refer to 2.)
3. Recover gas from the refrigerant circuit.
   **NOTE:** Recover gas from the pipes until the pressure gauge shows 0 kg/cm² (0 MPa).
4. Detach the welded part of the suction and the discharge pipe connected with compressor.
5. Remove the nuts of compressor legs.
6. Remove the compressor.
7. Detach the welded part of pipes connected with 4-way valve. (Photo 8)
**SUZ-KA50VA2.TH** | **SUZ-KA60VA2.TH**

**OPERATING PROCEDURE**

1. Removing the cabinet  
   1. Remove the screws of the service panel.  
   2. Remove the screws of the top panel.  
   3. Remove the screw of the valve cover.  
   4. Remove the service panel.  
   5. Remove the top panel.  
   6. Remove the valve cover.  
   7. Remove the screws of the cabinet.  
   8. Remove the cabinet.  
   9. Remove the screws of the back panel.  
  10. Remove the back panel.

**PHOTOS**

- **Photo 1**
  - Screw of the top panel
  - Screws of the cabinet

- **Photo 2**
  - Screw of the service panel
  - Screws of the top panel
  - Screws of the cabinet
  - Screw of the valve cover

- **Photo 3**
  - Screw of the motor support
  - Screws of the back panel
  - Set screws of the back panel

**NOTE:** Turn OFF power supply before disassembling.
2. Removing the inverter assembly, inverter P.C. board and power board
(for SUZ-KA50VA2.TH)

(1) Remove the top panel, cabinet, service panel and back panel. (Refer to 1.)
(2) Disconnect the lead wire to the reactor and the following connectors;
   <Inverter P.C. board>
   CN721 (R.V.coil)
   CN641 (Defrost thermistor and discharge temperature thermistor)
   CN643 (Ambient temperature thermistor)
   CN644 (Outdoor heat exchanger temperature thermistor)
   CN724 (LEV)
(3) Remove the compressor connector (CN61).
(4) Remove the screws fixing the relay panel. (Photo 5)
(5) Remove the inverter assembly. (Photo 6)
(6) Remove the screw of the earth wire and screw of the T.B.support. (Photo 6)
(7) Remove the screw of the PB fixture.
(8) Remove the relay panel from the PB support.
(9) Remove the inverter P.C. board from the inverter assembly.

(for SUZ-KA60VA2.TH)

(1) Remove the top panel, cabinet, service panel and back panel. (Refer to 1.)
(2) Disconnect the following connectors;
   <Electronic control P.C. board>
   CN931 and CN932 (Fan motor)
   CN795 (LEV)
   CN661 (Discharge temperature thermistor, defrost thermistor and outdoor heat exchanger temperature thermistor)
   <Noise filter P.C. board>
   CN912 (4-way valve)
(3) Remove the compressor connector.
(4) Remove the screws fixing the relay panel.
(5) Remove the inverter assembly.
(6) Disconnect all connectors and lead wires on the electronic control P.C. board.
(7) Remove the electronic control P.C. board from the inverter assembly.
(8) Remove the screws fixing the power board assembly.
(9) Disconnect all connectors and lead wires on the power board.
(10) Remove the power board from the inverter assembly.
(11) Disconnect all connectors and lead wires on the noise filter P.C. board.
(12) Remove the noise filter P.C. board from the inverter assembly.

3. Removing R.V. coil

(for SUZ-KA50VA2.TH)

(1) Remove the top panel, cabinet and service panel. (Refer to 1)
(2) Remove the back panel. (Refer to 1)
(3) Disconnect the following connectors;
   <inverter P.C. board>
   CN721 (R.V.coil)
   <Noise filter P.C. board>
   CN912 (R.V.coil)
(4) Remove the R.V. coil. (Photo 11)

(for SUZ-KA60VA2.TH)
### OPERATING PROCEDURE

**4. Removing the defrost thermistor, discharge temperature thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor**

1. Remove the top panel, cabinet and service panel.
   (Refer to 1.)
2. Remove the back panel. (Refer to 1.)
3. Remove the inverter assembly. (Refer to 2.)
4. Pull out the defrost thermistor from its holder. (Photo 8)
5. Pull out the discharge temperature thermistor from its holder. (Photo 7)
6. Pull out the outdoor heat exchanger temperature thermistor from its holder. (Photo 8)
7. Pull out the ambient temperature thermistor from its holder. (Photo 8)

**5. Removing outdoor fan motor**

1. Remove the top panel, cabinet and service panel. (Refer to 1.)
2. Remove the back panel. (Refer to 1.)
3. Disconnect the following connectors:
   - **for SUZ-KA50VA2.TH**
     - Inverter P.C. board
     - CN931 and CN932 (Fan motor)
   - **for SUZ-KA60VA2.TH**
     - Electric control P.C. board
     - CN931 and CN932 (Fan motor)
4. Remove the propeller.
5. Remove the screws fixing the fan motor.
6. Remove the fan motor

### PHOTOS

- **Photo 7**
  - Discharge temperature thermistor

- **Photo 8**
  - Outdoor heat exchanger temperature thermistor
  - Ambient temperature thermistor

- **Photo 9**
  - Propeller
  - Screws of the outdoor fan motor
### OPERATING PROCEDURE

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| 6. Removing the compressor and 4-way valve | (1) Remove the top panel, cabinet and service panel. (Refer to 1.)  
(2) Remove the back panel. (Refer to 1.)  
(3) Remove the inverter assembly. (Refer to 2.)  
(4) Recover gas from the refrigerant circuit.  
**NOTE:** Recover gas from the pipes until the pressure gauge shows 0 kg/cm² (0 MPa).  
(5) Detach the welded part of the suction and the discharge pipe connected with compressor. (Photo 11)  
(6) Remove the compressor nuts.  
(7) Remove the compressor.  
(8) Detach the welded part of 4-way valve and pipe. (Photo 10) |

### PHOTOS

<table>
<thead>
<tr>
<th>Photo</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photo 10</td>
<td>Welded parts of 4-way valve</td>
</tr>
</tbody>
</table>
| Photo 11 | R.V. coil  
Welded part of the discharge pipe  
Welded part of the suction pipe |
| Photo 12 | Screws of the reactor |

### 7. Removing the reactor

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| (1) Remove the top panel. (Refer to 1.)  
(2) Disconnect the reactor lead wire.  
(3) Remove the screws of the reactor, and remove the reactor. |
**NOTE:** Turn OFF power supply before disassembling.

<table>
<thead>
<tr>
<th>OPERATING PROCEDURE</th>
<th>PHOTOS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Removing the cabinet</strong></td>
<td><strong>Photo 1</strong></td>
</tr>
<tr>
<td>(1) Remove the screws of the service panel.</td>
<td></td>
</tr>
<tr>
<td>(2) Remove the screws of the top panel.</td>
<td></td>
</tr>
<tr>
<td>(3) Remove the screw of the valve cover.</td>
<td></td>
</tr>
<tr>
<td>(4) Remove the service panel.</td>
<td></td>
</tr>
<tr>
<td>(5) Remove the top panel.</td>
<td></td>
</tr>
<tr>
<td>(6) Remove the valve cover.</td>
<td></td>
</tr>
<tr>
<td>(7) Disconnect the power supply and indoor/outdoor connecting wire.</td>
<td></td>
</tr>
<tr>
<td>(8) Remove the screws of the cabinet.</td>
<td></td>
</tr>
<tr>
<td>(9) Remove the cabinet.</td>
<td></td>
</tr>
<tr>
<td>(10) Remove the screws of the back panel.</td>
<td></td>
</tr>
<tr>
<td>(11) Remove the back panel.</td>
<td></td>
</tr>
</tbody>
</table>
2. Removing the inverter assembly, inverter P.C. board
   (1) Remove the cabinet and panels. (Refer to 1.)
   (2) Disconnect the lead wire to the reactor and the following connectors:
      <Inverter P.C. board>
      CN602 (R.V. coil)
      CN931, CN932 (Fan motor)
      CN671 (Defrost thermistor, discharge temperature thermistor
      and outdoor heat exchanger temperature thermistor)
      CN672 (Ambient temperature thermistor)
      CN724 (LEV)
   (3) Remove the compressor connector.
   (4) Remove the screws fixing the relay panel.
   (5) Remove the relay panel.
   (6) Remove the earth wires and the lead wires of the inverter P.C.
       board.
   (7) Remove the screw of the PB support.
   (8) Remove the inverter P.C. board from the relay panel.

3. Removing R.V. coil
   (1) Remove the cabinet and panels. (Refer to 1.)
   (2) Disconnect the following connector:
      <Inverter P.C. board>
      CN602 (R.V. coil)
   (3) Remove the R.V. coil.
### OPERATING PROCEDURE

<table>
<thead>
<tr>
<th>4. Removing the discharge temperature thermistor, defrost thermistor, outdoor heat exchanger temperature thermistor and ambient temperature thermistor</th>
</tr>
</thead>
</table>
| **(1)** Remove the cabinet and panels. (Refer to 1.)  
** (2) Disconnect the lead wire to the reactor and the following connectors:  
*Inverter P.C. board*  
CN671 (Defrost thermistor, discharge temperature thermistor and outdoor heat exchanger temperature thermistor)  
CN672 (Ambient temperature thermistor)  
| **(3)** Pull out the discharge temperature thermistor from its holder. (Photo 7)  
** (4) Pull out the defrost thermistor from its holder.  
** (5) Pull out the outdoor heat exchanger temperature thermistor from its holder.  
** (6) Pull out the ambient temperature thermistor from its holder.  

<table>
<thead>
<tr>
<th>5. Removing outdoor fan motor</th>
</tr>
</thead>
</table>
| **(1)** Remove the top panel, cabinet and service panel. (Refer to 1.)  
** (2) Disconnect the following connectors:  
*Inverter P.C. board*  
CN931 and CN932 (Fan motor)  
| **(3)** Remove the propeller.  
** (4) Remove the screws fixing the fan motor.  
** (5) Remove the fan motor.  

<table>
<thead>
<tr>
<th>6. Removing the compressor and 4-way valve</th>
</tr>
</thead>
</table>
| **(1)** Remove the top panel, cabinet and service panel. (Refer to 1.)  
** (2) Remove the back panel. (Refer to 1.)  
** (3) Remove the inverter assembly. (Refer to 2.)  
** (4) Recover gas from the refrigerant circuit.  
** **NOTE:** Recover gas from the pipes until the pressure gauge shows 0 kg/cm² (0 MPa).  
** (5) Detach the welded part of the suction and the discharge pipe connected with compressor.  
** (6) Remove the compressor nuts.  
** (7) Remove the compressor.  
** (8) Detach the welded part of 4-way valve and pipe. (Photo 4)  

### PHOTOS

#### Photo 5
Outdoor heat exchanger temperature thermistor  
Ambient temperature thermistor

#### Photo 6
Defrost thermistor
Screws of the outdoor fan motor

#### Photo 7
Discharge temperature thermistor  
Welded part of the suction pipe  
Welded part of the discharge pipe