TECHNICAL & SERVICE MANUAL

Series SEZ  Ceiling Concealed R410A

Indoor unit
[Model names]
SEZ-KD09NA
SEZ-KD12NA
SEZ-KD15NA
SEZ-KD18NA

[Service Ref.]
SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

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INDOOR UNIT

Wired Remote Controller

Model name indication
1 PART NAMES AND FUNCTIONS

Indoor Unit
SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

Wired remote controller
Once the controls are set, the same operation mode can be repeated by simply pressing the ON/OFF button.

Operation buttons
● Display

For purposes of this explanation, all parts of the display are shown as lit. During actual operation, only the relevant items will be lit.

**Day-of-Week**
Shows the current day of the week.

**Time/Timer Display**
Shows the current time (The 12 hour clock or The 24 hour clock), unless the simple or Auto Off timer is set. If the simple or Auto Off timer is set, shows the time remaining.

**Temperature Setting**
Shows the target temperature.

**“Centrally Controlled” indicator**
Indicates that operation of the remote controller has been prohibited by a master controller.

**“Timer Is Off” indicator**
Indicates that the timer is off.

**“One Hour Only” indicator**
Displayed if the airflow is set to Low and downward during COOL or DRY mode. (Operation varies according to model.) The indicator goes off after one hour, at which time the airflow direction also changes.

**Room Temperature display**
Shows the room temperature.

**Louver display**
Indicates the action of the swing louver. Does not appear if the louver is stationary.

**Up/Down Air Direction indicator**
The indicator shows the direction of the outcoming airflow.

**Fan Speed indicator**
Shows the selected fan speed.

**Ventilation indicator**
Appears when the unit is running in Ventilation mode.

**“Locked” indicator**
Indicates that remote controller buttons have been locked.

**“Clean The Filter” indicator**
Comes on when it is time to clean the filter.

**“Timer Indicators”**
The indicator comes on if the corresponding timer is set.

**“Sensor” indication**
Displayed when the remote controller sensor is used.

**“Power On indicator”**
Indicates that the power is on.

**Caution**

- Only the Power on indicator lights when the unit is stopped and power supplied to the unit.
- If you press a button for a feature that is not installed in the indoor unit, the remote controller will display the “Not Available” message.
  If you are using the remote controller to operate multiple indoor units, this message will appear only if the feature is not present at the parent unit.
- When power is turned ON for the first time, it is normal that “PLEASE WAIT” is displayed on the room temperature indication (For max. 2minutes). Please wait until this “PLEASE WAIT” indication disappears then start the operation.
## SPECIFICATIONS

<table>
<thead>
<tr>
<th>Model Name</th>
<th>SEZ-KD09NA</th>
<th>SEZ-KD12NA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cooling</td>
<td>Heating</td>
</tr>
<tr>
<td></td>
<td>BTU/h</td>
<td>kW</td>
</tr>
<tr>
<td></td>
<td>9000</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>10900</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>12000</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>13600</td>
<td>0.05</td>
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<tr>
<td><strong>Power source</strong></td>
<td>208/230V (60Hz)</td>
<td>208/230V (60Hz)</td>
</tr>
<tr>
<td><strong>Power input</strong></td>
<td>kW</td>
<td>kW</td>
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<td>0.06</td>
<td>0.04</td>
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<tr>
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<td>0.07</td>
<td>0.05</td>
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<td><strong>Current</strong></td>
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<td>A</td>
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<tr>
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<td>0.51</td>
<td>0.39</td>
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<tr>
<td></td>
<td>0.57</td>
<td>0.46</td>
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<td><strong>Temperature set range Remote controller</strong></td>
<td>°F (˚C)</td>
<td>°F (˚C)</td>
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<tr>
<td></td>
<td>67 to 86 (19 to 30)</td>
<td>67 to 86 (19 to 30)</td>
</tr>
<tr>
<td></td>
<td>63 to 83 (17 to 28)</td>
<td>63 to 83 (17 to 28)</td>
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<tr>
<td><strong>Airflow direction</strong></td>
<td>Fan</td>
<td>Fan</td>
</tr>
<tr>
<td></td>
<td>in.WG (Pa)</td>
<td>kW</td>
</tr>
<tr>
<td></td>
<td>0.02-0.06-0.14</td>
<td>0.02-0.06-0.14</td>
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<tr>
<td></td>
<td>0.20 (5-15-35-50)</td>
<td>0.20 (5-15-35-50)</td>
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<tr>
<td><strong>External static press</strong></td>
<td>m&lt;sup&gt;-1&lt;/sup&gt;/min</td>
<td>m&lt;sup&gt;-1&lt;/sup&gt;/min</td>
</tr>
<tr>
<td></td>
<td>5.5-7.0-9.0</td>
<td>7.0-9.0-11.0</td>
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<tr>
<td><strong>Airflow rate (Low-Mid-High)</strong></td>
<td>CFM</td>
<td>CFM</td>
</tr>
<tr>
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<td>184-247-317</td>
<td>247-317-388</td>
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<tr>
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<td>L/S</td>
<td>L/S</td>
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<tr>
<td></td>
<td>91-116-150</td>
<td>116-150-183</td>
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<tr>
<td><strong>External dimension</strong></td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td></td>
<td>200 x 790 x 700</td>
<td>200 x 990 x 700</td>
</tr>
<tr>
<td></td>
<td>in.</td>
<td>in.</td>
</tr>
<tr>
<td></td>
<td>7-7/8 x 31-1/8 x 27-9/16</td>
<td>7-7/8 x 39 x 27-9/16</td>
</tr>
<tr>
<td><strong>Net weight</strong></td>
<td>kg</td>
<td>kg</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>21</td>
</tr>
<tr>
<td><strong>Wiring</strong></td>
<td>Min.size of wire</td>
<td>Amperage of wirebreaker</td>
</tr>
<tr>
<td></td>
<td>in.(mm)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>1/8 (1.6)</td>
<td>15/18 (1.6)</td>
</tr>
<tr>
<td><strong>Refrigerant piping diameter</strong></td>
<td>Liquid</td>
<td>Gas</td>
</tr>
<tr>
<td></td>
<td>R410A</td>
<td>R410A</td>
</tr>
<tr>
<td></td>
<td>in.(mm)</td>
<td>in.(mm)</td>
</tr>
<tr>
<td></td>
<td>ø1/4 (ø6.35)</td>
<td>ø1/4 (ø6.35)</td>
</tr>
<tr>
<td></td>
<td>Flare</td>
<td>Flare</td>
</tr>
<tr>
<td></td>
<td>ø1/8 (ø9.52)</td>
<td>ø1/8 (ø9.52)</td>
</tr>
<tr>
<td></td>
<td>Flare</td>
<td>Flare</td>
</tr>
<tr>
<td></td>
<td>O.D. 1-9/32 (32)</td>
<td>O.D. 1-9/32 (32)</td>
</tr>
<tr>
<td><strong>Sound level (Low-Mid-High)</strong></td>
<td>dB(A)&lt;sup&gt;≤&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>23-26-30</td>
<td>23-28-33</td>
</tr>
<tr>
<td><strong>Insulation material</strong></td>
<td>Polystyrene foam, Polyethylene foam, Urethane foam</td>
<td>Polystyrene foam, Polyethylene foam, Urethane foam</td>
</tr>
<tr>
<td><strong>Air filter</strong></td>
<td>PP Honeycomb fabric (washable)</td>
<td>PP Honeycomb fabric (washable)</td>
</tr>
<tr>
<td><strong>Refrigerant control device</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protection devices</strong></td>
<td>Fuse (250V 6.3A)</td>
<td>Fuse (250V 6.3A)</td>
</tr>
<tr>
<td></td>
<td>Cross fin (Aluminum fin and copper tube)</td>
<td>Cross fin (Aluminum fin and copper tube)</td>
</tr>
<tr>
<td><strong>Heat exchanger</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ERZV10D471</td>
<td>ERZV10D471</td>
</tr>
<tr>
<td><strong>Variator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Terminal block</strong></td>
<td>To outdoor unit : 3P</td>
<td>To outdoor unit : 3P</td>
</tr>
<tr>
<td></td>
<td>To wired remote controller : 2P</td>
<td>To wired remote controller : 2P</td>
</tr>
<tr>
<td><strong>Power outlet</strong></td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td><strong>Standard attachment</strong></td>
<td>Document</td>
<td>Installation Manual, Instruction Book</td>
</tr>
<tr>
<td></td>
<td>Accessory</td>
<td>Drain hose (flexible joint), Wired Remote Controller</td>
</tr>
<tr>
<td><strong>Remark</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Note
1. Cooling/Heating capacity indicates the maximum value at operation under the following conditions.
   - <Heating> Indoor: 70°F.B. / 21.1°C.D.B. 
   - Outdoor: 47°F.B. / 43°F.W.B. (8.3°C.D.B. / 6.1°C.W.B.)
2. Power consumption. Run current at 0.06[in.WG] (15Pa) (external static pressure)
3. Cooling capacity value at 1:1 system
   - Heating capacity value at 1:1 system

4. **Pipe length:** 24-9/16ft (7.5m)  **Height difference:** 0ft (0m)

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**Power supply:** 208/230V (60Hz) **Power input:** kW **Current:** A **Remote controller:** Wired Remote Controller **Pipe length:** 24-9/16ft (7.5m) **Height difference:** 0ft (0m)
<table>
<thead>
<tr>
<th>Model Name</th>
<th>SEZ-KD15NA</th>
<th>SEZ-KD18NA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capacity</strong></td>
<td><strong>Cooling</strong></td>
<td><strong>Heating</strong></td>
</tr>
<tr>
<td></td>
<td>BTU/h</td>
<td>15000</td>
</tr>
<tr>
<td>Power source</td>
<td>kW</td>
<td>208/230V (60Hz)</td>
</tr>
<tr>
<td>Power input</td>
<td>kW</td>
<td>0.09</td>
</tr>
<tr>
<td>Current</td>
<td>A</td>
<td>0.74</td>
</tr>
<tr>
<td>Temperature set range</td>
<td>°F (˚C)</td>
<td>67 to 86 (19 to 30)</td>
</tr>
<tr>
<td><strong>Airflow direction</strong></td>
<td>Fan type</td>
<td>Sirocco fan x 3</td>
</tr>
<tr>
<td></td>
<td>Motor type</td>
<td>DC brushless motor</td>
</tr>
<tr>
<td></td>
<td>Motor output</td>
<td>kW</td>
</tr>
<tr>
<td></td>
<td>Driving mechanism</td>
<td>Direct-driven</td>
</tr>
<tr>
<td>Airflow rate (Low-Mid-High)</td>
<td>m³/min</td>
<td>10.0 to 15.0</td>
</tr>
<tr>
<td>Airflow rate (Low-Mid-High)</td>
<td>CFM</td>
<td>353 to 441</td>
</tr>
<tr>
<td>Airflow rate (High)</td>
<td>L/S</td>
<td>167 to 208-250</td>
</tr>
<tr>
<td>External dimension</td>
<td>mm</td>
<td>200 x 990 x 700</td>
</tr>
<tr>
<td>H x W x D</td>
<td>in.</td>
<td>7-7/8 x 39 x 27-9/16</td>
</tr>
<tr>
<td><strong>Net weight</strong></td>
<td>kg</td>
<td>23</td>
</tr>
<tr>
<td><strong>Wiring</strong></td>
<td>Min. size of wire</td>
<td>in. (mm)</td>
</tr>
<tr>
<td></td>
<td>Amperage of wire breaker</td>
<td>A</td>
</tr>
<tr>
<td>Refrigerant piping diameter</td>
<td>Liquid R410A</td>
<td>in. (mm)</td>
</tr>
<tr>
<td>Refrigerant piping diameter</td>
<td>Gas R410A</td>
<td>in. (mm)</td>
</tr>
<tr>
<td>Drain piping diameter</td>
<td>in. (mm)</td>
<td>0.73 (19mm) Flare</td>
</tr>
<tr>
<td><strong>Sound level (Low-Mid-High)</strong></td>
<td>(measured in anechoic room)</td>
<td>dB &lt;A&gt;</td>
</tr>
<tr>
<td><strong>Insulation material</strong></td>
<td></td>
<td>Polystyrene foam, Polyethylene foam, Urethane foam</td>
</tr>
<tr>
<td><strong>Air filter</strong></td>
<td></td>
<td>PP Honeycomb fabric (washable)</td>
</tr>
<tr>
<td><strong>Refrigerant control device</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protection devices</strong></td>
<td></td>
<td>Fuse (250V 6.3A)</td>
</tr>
<tr>
<td><strong>Heat exchanger</strong></td>
<td></td>
<td>Cross fin (Aluminum fin and copper tube)</td>
</tr>
<tr>
<td><strong>Varistor</strong></td>
<td></td>
<td>ERZV10D47/1</td>
</tr>
<tr>
<td><strong>Terminal block</strong></td>
<td></td>
<td>To outdoor unit : 3P</td>
</tr>
<tr>
<td><strong>Power outlet</strong></td>
<td>A</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Accessory</td>
<td>Drain hose (flexible joint), Wired Remote Controller</td>
</tr>
<tr>
<td><strong>Remark</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note**

1. Cooling/Heating capacity indicates the maximum value at operation under the following condition.
   - Cooling: Indoor: 80°F DB / 67°F WB (26.7°C DB / 19.4°C WB) Outdoor: 95°F DB / 89°F WB (35°C DB / 32°C WB)
   - Heating: Indoor: 70°F DB / 21.1°F WB (21.1°C DB / 6.1°C WB)
2. Power consumption. Run current at 0.06 in. W.G (15 Pa) (external static pressure)
3. Cooling capacity value at 1:1 system

Heating capacity value at 1:1 system
SOUND CRITERION CURVES

SEZ-KD09NA.TH
External static pressure: 0.06[in.WG](15Pa)

<table>
<thead>
<tr>
<th>NOTCH</th>
<th>SPL(dB)</th>
<th>LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>30</td>
<td>-</td>
</tr>
<tr>
<td>Middle</td>
<td>25</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>22</td>
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</table>

SEZ-KD09NA.TH
External static pressure: 0.20[in.WG](50Pa)

<table>
<thead>
<tr>
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<th>SPL(dB)</th>
<th>LINE</th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>33</td>
<td>-</td>
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<tr>
<td>Middle</td>
<td>29</td>
<td>-</td>
</tr>
<tr>
<td>Low</td>
<td>25</td>
<td>-</td>
</tr>
</tbody>
</table>

NOTE: The sound level is measured in an anechoic room where echoes are few, when compressor stops. The sound may be bigger than displayed level under actual installation condition by surrounding echoes. The sound level can be higher by about 2 dB than the displayed level during cooling and heating operation.
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INDOOR FAN PERFORMANCE AND CORRECTED AIR FLOW

SEZ-KD09NA
(External static pressure 0.02[in.WG](5Pa)) 208/230V 60Hz

SEZ-KD09NA
(External static pressure 0.06[in.WG](15Pa)) 208/230V 60Hz

SEZ-KD09NA
(External static pressure 0.14[in.WG](35Pa)) 208/230V 60Hz

SEZ-KD09NA
(External static pressure 0.20[in.WG](50Pa)) 208/230V 60Hz
Required space for service and maintenance

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>Gas pipe</th>
<th>Liquid pipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEZ-KD09NA</td>
<td>200</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>Ø9.52(3/8)</td>
<td>Ø6.35(1/4)</td>
</tr>
<tr>
<td>SEZ-KD12NA</td>
<td>200</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>Ø9.52(3/8)</td>
<td>Ø6.35(1/4)</td>
</tr>
<tr>
<td>SEZ-KD15NA</td>
<td>200</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>100</td>
<td>50</td>
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<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>Ø9.52(3/8)</td>
<td>Ø6.35(1/4)</td>
</tr>
<tr>
<td>SEZ-KD18NA</td>
<td>200</td>
<td>100</td>
<td>150</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>100</td>
<td>50</td>
<td>200</td>
<td>Ø9.52(3/8)</td>
<td>Ø6.35(1/4)</td>
</tr>
</tbody>
</table>

Note1: Use M10 screw for the suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. This chart indicates for SEZ-KD15NA model, which has 3 fans. SEZ-KD09,12NA models have 2 fans. SEZ-KD18NA models have 4 fans.
4. In case an inlet duct is used, remove the air filter (supply with the unit), then install the filter (field supply) at suction side.
**WIRING DIAGRAM**

SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

**INSIDE SECTION OF CONTROL BOX**

**SYMBOL EXPLANATION**

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NAME</th>
<th>SYMBOL</th>
<th>NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. B.</td>
<td>INDOOR CONTROLLER BOARD</td>
<td>LED2</td>
<td>POWER SUPPLY(I.B.)</td>
</tr>
<tr>
<td>FUSE</td>
<td>FUSE AC250V 6.3A</td>
<td>LED3</td>
<td>TRANSMISSION(INDOOR-OUTDOOR)</td>
</tr>
<tr>
<td>ZNR01,02</td>
<td>VARISTOR</td>
<td>SW1</td>
<td>SWITCH (FOR CAPACITY CODE)</td>
</tr>
<tr>
<td>DSA</td>
<td>ARRESTER</td>
<td>SW2</td>
<td>SWITCH (FOR MODE SELECTION)</td>
</tr>
<tr>
<td>X1</td>
<td>AUX. RELAY</td>
<td>SW3</td>
<td>CONNECTOR (EMERGENCY OPERATION)</td>
</tr>
<tr>
<td>CN2L</td>
<td>CONNECTOR (LOSSNAY)</td>
<td>TH1</td>
<td>INTAKE AIR TEMP. THERMISTOR</td>
</tr>
<tr>
<td>CN24</td>
<td>CONNECTOR (BACK-UP HEATING)</td>
<td>TH2</td>
<td>PIPE TEMP. THERMISTOR/LIQUID</td>
</tr>
<tr>
<td>CN32</td>
<td>CONNECTOR (REMOTE SWITCH)</td>
<td>TH6</td>
<td>COND.-EVA. TEMP. THERMISTOR</td>
</tr>
<tr>
<td>CN41</td>
<td>CONNECTOR (HA TERMINAL-A)</td>
<td>FS</td>
<td>FLOAT SWITCH</td>
</tr>
<tr>
<td>CN51</td>
<td>CONNECTOR (CENTRALLY CONTROL)</td>
<td>TB4</td>
<td>TERMINAL BLOCK (INDOOR/OUTDOOR CONNECTING LINE)</td>
</tr>
<tr>
<td>CN90</td>
<td>CONNECTOR (WIRELESS)</td>
<td>TB15</td>
<td>TERMINAL BLOCK (REMOTE CONTROLLER TRANSMISSION LINE)</td>
</tr>
</tbody>
</table>

Note 1. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.
2. Indoor and outdoor connecting wires are made with polarities, make wiring matching terminal numbers (S1, S2, S3).
3. Symbols used in wiring diagram above are: @:Connector, #:Terminal.
4. Use copper supply wire.

**PARTS LOCATION**

**Note:**
- Use copper supply wire.
- Check the outdoor unit electric wiring for servicing.
REFRIGERANT SYSTEM DIAGRAM

SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

Heat exchanger

Pipe temperature thermistor/liquid (TH2)

Distributor

Condenser/evaporator temperature thermistor (TH5)

Strainer #50

Refrigerant GAS pipe connection (Flare)

Refrigerant LIQUID pipe connection (Flare)

Room temperature thermistor (TH1)

Strainer #50

Refrigerant flow in cooling

- - Refrigerant flow in heating
6-1. Control specifications and Function setting

Table 1 shows how the field-installed heater is controlled. Select the desired pattern in the table below, and set the function on the indoor units as shown in Table 1.

Table 1 [Function table]
Select unit numbers 01 to 03 or all units (AL[wired remote controller] / 07[wireless remote controller])

<table>
<thead>
<tr>
<th>Mode</th>
<th>Setting</th>
<th>Mode no.</th>
<th>Setting</th>
<th>Initial setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater control</td>
<td>Heater OFF</td>
<td>23</td>
<td>1</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>Inlet air temp. ≥ set temp.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heater ON</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet air temp. &lt; set temp. -4.5°F(2.5°C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>· The fan will stop and the heater will turn off when [DEFROST] or [ERROR] is displayed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet air temp.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heater output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heater OFF</td>
<td>Inlet air temp. ≥ set temp.</td>
<td>23</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Heater ON</td>
<td>Inlet air temp. &lt; set temp. -1.8°F(2.5°C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>· The fan will drive and the heater will turn on when [DEFROST] or [ERROR] is displayed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inlet air temp.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heater output</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Refer to the Installation Manual for function settings.

6-2. Fan control

By setting the Mode No. 23 in the Function Table in section 6-1 to 2 and using CN4Y on the optional parts PAC-YU25HT, the following patterns of fan control will become possible when [DEFROST] or [ERROR] is displayed.

Fan control patterns when [DEFROST] or [ERROR] is displayed

<table>
<thead>
<tr>
<th>Use of CN4Y (PAC-YU25HT)</th>
<th>Heater is installed in the duct.</th>
<th>No heater is installed in the duct.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heater is off.</td>
<td>Fan ON*1</td>
<td>Fan OFF</td>
</tr>
<tr>
<td>Heater is on.</td>
<td>Fan ON*1</td>
<td>Fan OFF</td>
</tr>
</tbody>
</table>

* If a heater is installed in the duct, do not use CN4Y. By doing so, the fan will turn off when the heater is on, which may result in fire.

*1 Fan speed setting

<table>
<thead>
<tr>
<th>Mode</th>
<th>Setting</th>
<th>Mode no.</th>
<th>Setting</th>
<th>Initial setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan control</td>
<td>Heating Thermo-OFF</td>
<td>25</td>
<td>1</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>[DEFROST] or [ERROR]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remote controller setting</td>
<td>25</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

*Refer to the Installation Manual for function settings.
6-3. PAC-YU25HT (Optional Parts) installation

The following section describes installation of the External Heater Adapter that connects to SEZ-KD-NA series indoor unit. This product is the special wiring parts to drive an electric heater with the air conditioner.

(1) Parts list
• Check that the following parts are included in the package.
  1) External output cable (with a yellow connector) ...............2 in total
     Two types of cables with different connectors are included.
  2) Panel heater connector ...................................3 in total
     White: 1
     Green: 2 (2 types)

(2) Connection to the indoor unit
• Use the cables that fit the connectors on the indoor unit control board.
  1) External output cable (with a yellow connector)
     This cable is used to connect a relay circuit for an interlocked operation with either an electric or a panel heater.
     Connect the cable to CN24 on the indoor unit control board.
  2) Panel heater connector (with a white connector)
     This connector is used to perform an interlocked operation with a panel heater. Depending on the indoor unit control board specification, connect the cable to CN4Y as appropriate

(3) Locally procured wiring
• A basic connection method is shown below.
For relay X use the specifications given below:

- Operation coil
  - Rated voltage: 12VDC
  - Power consumption: 0.9W or less
  - Use the diode that is recommended by the relay manufacturer at both ends of the relay coil.

- The length of the electrical wiring for the PAC-YU25HT is 2 meters (6-1/2 ft.)
  - To extend this length, use sheathed 2-core cable.
  - Control cable type: CVV, CVS, CPEV or equivalent.
  - Cable size: 0.5 mm² – 1.25 mm² (16 to 22 AWG)
  - Don't extend the cable more than 10 meters (32ft)

(4) Wiring restrictions

- Keep the length of the cable connecting to the circuit board of the indoor unit shorter than 10 meters (32ft).
- Longer than 10 meters (32ft) could cause improper operation.
- Use a transit relay when extending wiring such as remote wiring.
TROUBLESHOOTING

7-1. CAUTIONS ON TROUBLESHOOTING
(1) Before troubleshooting, check the followings:
   ① Check the power supply voltage.
   ② Check the indoor/outdoor connecting wire for mis-wiring.
(2) Take care the followings during servicing:
   ① Before servicing the air conditioner, be sure to turn off the remote controller first to stop the main unit, and then turn off the breaker.
   ② When removing the indoor controller board, hold the edge of the board with care NOT to apply stress on the components.
   ③ When connecting or disconnecting the connectors, hold the housing of the connector. DO NOT pull the lead wires.

7-2. SELF-CHECK FUNCTION
Wired remote controller
(1) Turn on the power.
(2) Press the [CHECK] button twice.
(3) Set refrigerant address with [TEMP] button if system control is used.
(4) Press the [ON/OFF] button to stop the self-check.
   ① CHECK button
   ② Indoor Unit’s Refrigerant address
   ③ TEMP button
   ④ IC : Indoor unit
   ⑤ OC : Outdoor unit
   ⑥ Check code
   ⑦ Indoor Unit No.

• For description of each check code, refer to the following table.

<table>
<thead>
<tr>
<th>Check code</th>
<th>Symptom</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Intake sensor error</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>Pipe (TH2) sensor error</td>
<td></td>
</tr>
<tr>
<td>P9</td>
<td>Pipe (TH5) sensor error</td>
<td></td>
</tr>
<tr>
<td>E6,E7</td>
<td>Indoor/outdoor unit communication error</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>Drain sensor error</td>
<td></td>
</tr>
<tr>
<td>P5</td>
<td>Drain pump error</td>
<td></td>
</tr>
<tr>
<td>P6</td>
<td>Freezing/Overheating protection operation</td>
<td></td>
</tr>
<tr>
<td>EE</td>
<td>Communication error between indoor and outdoor units</td>
<td></td>
</tr>
<tr>
<td>P8</td>
<td>Pipe temperature error</td>
<td></td>
</tr>
<tr>
<td>E0, E3–E5</td>
<td>Remote controller transmission error</td>
<td></td>
</tr>
<tr>
<td>E1, E2</td>
<td>Remote controller control board error</td>
<td></td>
</tr>
<tr>
<td>Fb</td>
<td>Indoor unit control system error (memory error, etc.)</td>
<td></td>
</tr>
<tr>
<td>E9</td>
<td>Indoor/outdoor unit communication error (Transmitting error) (Outdoor unit)</td>
<td></td>
</tr>
<tr>
<td>UP</td>
<td>Compressor overcurrent interruption</td>
<td></td>
</tr>
<tr>
<td>U3, U4</td>
<td>Open/short of outdoor unit thermistors</td>
<td></td>
</tr>
<tr>
<td>UF</td>
<td>Compressor overcurrent interruption (When compressor locked)</td>
<td></td>
</tr>
<tr>
<td>U2</td>
<td>Abnormal high discharging temperature/49°C worked/insufficient refrigerant</td>
<td></td>
</tr>
<tr>
<td>U1, U4d</td>
<td>Abnormal high pressure (63H worked)/Overheating protection operation</td>
<td></td>
</tr>
<tr>
<td>U5</td>
<td>Abnormal temperature of heat sink</td>
<td></td>
</tr>
<tr>
<td>U8</td>
<td>Outdoor unit fan safeguard stop</td>
<td></td>
</tr>
<tr>
<td>U6</td>
<td>Compressor overcurrent interruption/Abnormal of power module</td>
<td></td>
</tr>
<tr>
<td>U7</td>
<td>Abnormality of super heat due to low discharge temperature</td>
<td></td>
</tr>
<tr>
<td>U9, U1H</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>Others</td>
<td>Other errors (Refer to the technical manual for the outdoor unit.)</td>
<td></td>
</tr>
</tbody>
</table>

• For details, check the LED display of the outdoor controller board. As for outdoor unit, refer to service manual OC322.

• On wired remote controller.
   ① Check code displayed in the LCD.
• If the unit cannot be operated properly after the test run has been performed, refer to the following table to remove the cause.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Wired remote controller</th>
<th>LED 1, 2 (PCB in outdoor unit)</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLEASE WAIT</td>
<td>For about 2 minutes after power-on</td>
<td>After LED 1, 2 are lighted. LED 2 is turned off, then only LED 1 is lighted. (Correct operation)</td>
<td>• For about 2 minutes after power-on, operation of the remote controller is not possible due to system start-up. (Correct operation)</td>
</tr>
<tr>
<td>PLEASE WAIT → Error code</td>
<td>After about 2 minutes has expired after power-on</td>
<td>Only LED 1 is lighted. → LED 1, 2 blink.</td>
<td>• Connector for the outdoor unit’s protection device is not connected. &lt;br&gt; • Reverse or open phase wiring for the outdoor unit’s power terminal block (L1, L2, L3)</td>
</tr>
<tr>
<td>Display messages do not appear even when operation switch is turned ON (operation lamp does not light up).</td>
<td>Only LED 1 is lighted. → LED 1 blinks twice, LED 2 blinks once.</td>
<td>• Incorrect wiring between indoor and outdoor units (incorrect polarity of S1, S2, S3) &lt;br&gt; • Remote controller wire short</td>
<td></td>
</tr>
</tbody>
</table>

On the wireless remote controller with condition above, following phenomena take place.
• No signals from the remote controller are accepted.
• Operation lamp is blinking.
• The buzzer makes a short piping sound.

**Note:**
Operation is not possible for about 30 seconds after cancellation of function selection. (Correct operation)

For description of each LED (LED1, 2, 3) provided on the indoor controller, refer to the following table.

| LED1 (power for microcomputer) | Indicates whether control power is supplied. Make sure that this LED is always lit. |
| LED2 (power for remote controller) | Indicates whether power is supplied to the remote controller. This LED lights only in the case of the indoor unit which is connected to the outdoor unit refrigerant address “0”. |
| LED3 (communication between indoor and outdoor units) | Indicates state of communication between the indoor and outdoor units. Make sure that this LED is always blinking. |
### 7-3. SELF-DIAGNOSIS ACTION TABLE

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Abnormal point and detection method</th>
<th>Cause</th>
<th>Countermear</th>
<th>Countermeasure</th>
</tr>
</thead>
</table>
| **P1**     | Room temperature thermistor (TH1)  | ① Defective thermistor characteristics  
② Contact failure of connector (CN20) on the indoor controller board (Insert failure)  
③ Breaking of wire or contact failure of thermistor wiring  
④ Defective indoor controller board | ①-③ Check resistance value of thermistor.  
0°C [32°F]......15.0kΩ  
10°C [50°F]......9.6kΩ  
20°C [68°F]......6.3kΩ  
30°C [86°F]......4.3kΩ  
40°C [104°F]......3.0kΩ | If you put force on (draw or bend) the lead wire with measuring resistance value of thermistor, breaking of wire or contact failure can be detected.  
⑤ Check contact failure of connector (CN20) on the indoor controller board. Refer to 7-5.  
Turn the power on again and check restart after inserting connector again.  
⑥ Check room temperature display on remote controller.  
Replace indoor controller board if there is abnormal difference with actual room temperature.  
Turn the power off, and on again to operate after check. |
| **P2**     | Pipe temperature thermistor/Liquid (TH2)  | ① Defective thermistor characteristics  
② Contact failure of connector (CN44) on the indoor controller board (Insert failure)  
③ Breaking of wire or contact failure of thermistor wiring  
④ Defective refrigerant circuit is causing thermistor temperature of 90˚C [194˚F] or more or -40˚C [-40˚F] or less  
⑤ Defective indoor controller board | ①-③ Check resistance value of thermistor.  
For characteristics, refer to (P1) above.  
⑤ Check contact failure of connector (CN44) on the indoor controller board. Refer to 7-5.  
Turn the power on again and check restart after inserting connector again.  
⑥ Check pipe <liquid> temperature with remote controller in test run mode. If pipe <liquid> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defective.  
⑦ Check pipe <liquid> temperature with remote controller in test run mode. If there is extreme difference with actual pipe <liquid> temperature, replace indoor controller board.  
Turn the power off, and on again to operate after check. |
| **P4**     | Contact failure of drain float switch (CN4F)  | ① Contact failure of connector (Insert failure)  
② Defective indoor controller board | ① Check contact failure of float switch connector.  
Turn the power on again and check after inserting connector again.  
② Operate with connector (CN4F) short-circuited. Replace indoor controller board if abnormality reappears. |
| **P5**     | Drain overflow protection operation  | ① Malfunction of drain pump  
② Defective drain pump switch  
③ Defective drain float switch  
④ Defective indoor-controller board | ① Check if drain-up machine works.  
② Check drain function.  
③ Remove drain float switch connector CN4F and check if it is short (Switch On) with the moving part of float switch UP, or OPEN with the moving part of float switch down. Replace float switch if it is short with the moving part of float switch down.  
④ Replace indoor controller board if it is short-circuited between ①-④ of the drain float switch connector CN4F and abnormality reappears.  
It is not abnormal if there is no problem about the above-mentioned ①-④.  
Turn the power off, and on again to operate after check. |
### Error Code Abnormal point and detection method Cause Countermeasure

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Abnormal point and detection method</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
<tbody>
<tr>
<td>P6</td>
<td>Freezing/overheating protection is working</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Freezing protection (Cooling mode)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The unit is in six-minute resume prevention mode if pipe &lt;liquid or condenser/evaporator&gt; temperature stays under -15°C[5°F] for three minutes after the compressor started. Abnormal if it stays under -15°C[5°F] for three minutes again within 16 minutes after six-minute resume prevention mode.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Overheating protection (Heating mode)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The units is in six-minute resume prevention mode if pipe &lt;Liquid or condenser / evaporator&gt; temperature is detected as over 70°C[158°F] after the compressor started. Abnormal if the temperature of over 70°C[158°F] is detected again within 10 minutes after six-minute resume prevention mode.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| P8         | Pipe temperature |       |                |
|            | - Cooling mode   |       |                |
|            |   Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes after compressor start and 6 minutes after the liquid or condenser/evaporator pipe is out of cooling range. Note 1) It takes at least 9 minutes to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -3 deg°C(-5.4deg°F) ≥ (TH-TH1) TH: Lower temperature between: liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature |       |                |
|            | - Heating mode   |       |                |
|            |   When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3) It takes at least 27 minutes to detect abnormality. Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over) Heating range : 3 deg°C(5.4deg°F) ≤ (TH5-TH1) |       |                |

| P6         | Freezing/overheating protection is working |       |                |
|            | - Freezing protection (Cooling mode) |       |                |
|            |   The unit is in six-minute resume prevention mode if pipe <liquid or condenser/evaporator> temperature stays under -15°C[5°F] for three minutes after the compressor started. Abnormal if it stays under -15°C[5°F] for three minutes again within 16 minutes after six-minute resume prevention mode. |       |                |
|            | - Overheating protection (Heating mode) |       |                |
|            |   The units is in six-minute resume prevention mode if pipe <Liquid or condenser / evaporator> temperature is detected as over 70°C[158°F] after the compressor started. Abnormal if the temperature of over 70°C[158°F] is detected again within 10 minutes after six-minute resume prevention mode. |       |                |

| P8         | Pipe temperature |       |                |
|            | - Cooling mode   |       |                |
|            |   Detected as abnormal when the pipe temperature is not in the cooling range 3 minutes after compressor start and 6 minutes after the liquid or condenser/evaporator pipe is out of cooling range. Note 1) It takes at least 9 minutes to detect. Note 2) Abnormality P8 is not detected in drying mode. Cooling range : -3 deg°C(-5.4deg°F) ≥ (TH-TH1) TH: Lower temperature between: liquid pipe temperature (TH2) and condenser/evaporator temperature (TH5) TH1: Intake temperature |       |                |
|            | - Heating mode   |       |                |
|            |   When 10 seconds have passed after the compressor starts operation and the hot adjustment mode has finished, the unit is detected as abnormal when condenser/evaporator pipe temperature is not in heating range within 20 minutes. Note 3) It takes at least 27 minutes to detect abnormality. Note 4) It excludes the period of defrosting (Detection restarts when defrosting mode is over) Heating range : 3 deg°C(5.4deg°F) ≤ (TH5-TH1) |       |                |

### Notes
1. It takes at least 9 minutes to detect.
2. Abnormality P8 is not detected in drying mode.
3. It takes at least 27 minutes to detect abnormality.
4. It excludes the period of defrosting (Detection restarts when defrosting mode is over)
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Abnormal point and detection method</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
</table>
| E4 or E0   | Abnormality of pipe temperature thermometer / Condenser-Evaporator (TH5) | ① Defective thermistor characteristics  
② Contact failure of connector (CN44) on the indoor controller board (Insert failure)  
③ Breaking of wire or contact failure of thermistor wiring  
④ Temperature of thermistor is 90°C[194°F] or more or -40°C[-40°F] or less  
⑤ Defective indoor controller board | ①-③ Check resistance value of thermistor.  
For characteristics, refer to (P1) above.  
② Check contact failure of connector (CN44) on the indoor controller board.  
Refer to 7-5.  
Turn the power on and check restart after inserting connector again.  
③ Operate in test run mode and check pipe <condenser / evaporator> temperature.  
If pipe <condenser / evaporator> temperature is extremely low (in cooling mode) or high (in heating mode), refrigerant circuit may have defect.  
④ When no problems are found in ①-③ above, replace the indoor unit control board. |
| E5 or E9 | Remote controller transmission error(E0)/signal receiving error(E4) | ① Abnormal if main or sub remote controller can not receive normally any transmission from indoor unit of refrigerant address “0” for three minutes.  
(Error code: E0)  
② Abnormal if sub remote controller could not receive for any signal for two minutes.  
(Error code: E0)  
① Abnormal if indoor controller board can not receive normally any data from remote controller board or from other indoor controller board for three minutes.  
(Error code: E4)  
② Indoor controller board cannot receive any signal from remote controller for two minutes.  
(Error code: E4) | ① Check disconnection or looseness of indoor unit or transmission wire of remote controller.  
② Set one of the remote controllers “main”.  
If there is no problem with the action above.  
③ Check wiring of remote controller.  
• Total wiring length: max.500m  
(Do not use cable 3 X 3 or more)  
• The number of connecting indoor units: max.16units  
• The number of connecting remote controller: max.2units |
| E3 or E5 | Remote controller transmission error(E3)/signal receiving error(E5) | ① Abnormal if remote controller could not find blank of transmission path for six seconds and could not transmit.  
(Error code: E3)  
② Remote controller receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times.  
(Error code: E3)  
① Abnormal if indoor controller board could not find blank of transmission path.  
(Error code: E5)  
② Indoor controller board receives transmitted data at the same time, compares the data, and when detecting it, judges different data to be abnormal 30 continuous times.  
(Error code: E5) | ① Set a remote controller to main, and the other to sub.  
② Remote controller is connected with only one indoor unit.  
③ The address changes to a separate setting.  
④-⑥ Diagnose remote controller.  
a) When “RC OK” is displayed, remote controllers have no problem.  
Turn the power off, and on again to check.  
If abnormality generates again, replace indoor controller board.  
b) When “RC NG” is displayed, Replace remote controller.  
c) When “RC E3” is displayed,  
d) When “ERC 00-06” is displayed,  
[ c),d)→Noise may be causing abnormality.]  
* If the unit is not normal after replacing indoor controller board in group control, indoor controller board of address “0” may be abnormal. |
<table>
<thead>
<tr>
<th>Error Code</th>
<th>Abnormal point and detection method</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
</table>
| E6         | Indoor/outdoor unit communication error (Signal receiving error)  
  ① Abnormal if indoor controller board cannot receive any signal normally for six minutes after turning the power on.  
  ② Abnormal if indoor controller board cannot receive any signal normally for three minutes.  
  ③ Consider the unit as abnormal under the following condition: When two or more indoor units are connected to an outdoor unit, indoor controller board cannot receive a signal for three minutes from outdoor controller circuit board, a signal which allows outdoor controller circuit board to transmit signals.  
  ④ When drain float switch is detected to be soaked in the water for 15 minutes or more.  
  ⑤ When drain float switch is detected to be NOT soaked in the water, each counting of a) and b) is cleared.  
  * When this error is detected, the error will not be reset until the main power is reset. | ① Contact failure, short circuit or, mis-wiring (converse wiring) of indoor/outdoor unit connecting wire  
  ② Defective transmitting receiving circuit of indoor controller board  
  ③ Defective transmitting receiving circuit of indoor controller board  
  ④ Noise has entered into indoor/outdoor unit connecting wire. | ① Check LED display on the outdoor control circuit board. (Connect A-control service tool, PAC-SKS2ST.)  
  Refer to EA-EC item if LED displays EA-EC.  
  ① Check disconnection or looseness of indoor/outdoor unit connecting wire of indoor unit or outdoor unit.  
  Check all the units in case of twin triple indoor unit system.  
  ①-⑥ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board or outdoor controller circuit board.  
  * Other indoor controller board may have defect in case of twin triple indoor unit system. |
| E7         | Indoor/outdoor unit communication error (Transmitting error)  
  Abnormal if “1” receiving is detected 30 times continuously though indoor controller board has transmitted “0”. | ① Defective transmitting receiving circuit of indoor controller board  
  ② Noise has entered into power supply.  
  ③ Noise has entered into outdoor control wire. | ①-⑥ Turn the power off, and on again to check. If abnormality generates again, replace indoor controller board. |
| Fb         | Indoor controller board  
  Abnormal if data cannot be read normally from the nonvolatile memory of the indoor controller board. | ① Defective indoor controller board | ① Replace indoor controller board. |
| E1 or E2  | Remote controller control board  
  ① Abnormal if data cannot be read normally from the nonvolatile memory of the remote controller control board.  
  (Error code: E1)  
  ② Abnormal if the clock function of remote controller cannot be operated normally.  
  (Error code: E2) | ① Defective remote controller | ① Replace remote controller. |
| PA (2500) | Water leakage  
  This detection is performed during the operation (stop, heating, fan, or error stop mode etc.) other than cooling and dry.  
  ① When a) and b) are found, water leakage occurs.  
  a) Pipe <liquid> temperature - inlet temperature < -10˚C [14˚F] for 30 minutes  
  b) When drain float switch is detected to be soaked in the water for 15 minutes or more.  
  * When drain float switch is detected to be NOT soaked in the water, each counting of a) and b) is cleared.  
  *When this error is detected, the error will not be reset until the main power is reset. | ① Mis-piping of extension pipes (When connected with multiple units)  
  ② Mis-wiring of indoor/outdoor unit connecting wire (When connected with multiple units)  
  ③ Detection failure of the indoor unit inlet/pipe <liquid> thermometer  
  ④ Drain pump failure  
  ⑤ Drainage failure  
  - Clogged drain pump  
  - Clogged drain pipe  
  ⑥ Drain float switch failure  
  - Drain float switch is detected to be soaked in the water (ON status) due to the operation failure of the moving parts.  
  - Contact failure of drain float switch connector (Loose connector) | ① Check the extension pipes for mis-piping.  
  ② Check the Indoor/outdoor unit connecting wire for mis-wiring.  
  ③ Check room temperature display on remote controller and indoor pipe <liquid> temperature. (Refer to the countermeasure on P2.)  
  ④ Check if drain-up machine works.  
  ⑤ Check drain function.  
  ⑥ Check drain float switch. (Refer to the countermeasure on P4 and P5.) |
## 7-4. TROUBLESHOOTING BY INFERIOR PHENOMENA

Note: Refer to the manual of outdoor unit for the detail of remote controller.

<table>
<thead>
<tr>
<th>Phenomena</th>
<th>Cause</th>
<th>Countermeasure</th>
</tr>
</thead>
</table>
| **(1)LED2 on indoor controller board is off.** | • When LED1 on indoor controller board is also off.  
• Power supply of rated voltage is not supplied to outdoor unit.  
• Defective outdoor controller circuit board  
• Power supply of 208–230V is not supplied to indoor unit.  
• Defective indoor controller board | ① Check the voltage of outdoor power supply terminal block (L, N) or (L3, N).  
• When AC 208–230V is not detected.  
Check the power wiring to outdoor unit and the breaker.  
• When AC 208–230V is detected.  
—Check ② (below).  
② Check the voltage between outdoor terminal block S1 and S2.  
• When AC 208–230V is not detected.  
Check the fuse on outdoor controller circuit board.  
Check the wiring connection.  
• When AC 208–230V is detected.  
—Check ③ (below).  
③ Check the voltage between indoor terminal block S1 and S2.  
• When AC 208–230V is not detected.  
Check indoor/outdoor unit connecting wire for mis-wiring.  
• When AC 208–230V is detected.  
—Check ④ (below).  
④ Check the fuse on indoor controller board.  
Check the wiring connection.  
If no problem are found, indoor controller board is defective. |
| **(2)LED2 on indoor controller board is blinking.** | • When LED1 on indoor controller board is also blinking.  
Connection failure of indoor/outdoor unit connecting wire  
• When LED1 is lit. | ① Check the connection of remote controller wires in case of twin triple indoor unit system.  
When 2 or more indoor units are wired in one refrigerant system, connect remote controller wires to one of those units.  
② Check the setting of refrigerant address in case of grouping control system.  
If there are some units whose refrigerant addresses are 0 in one group, set one of the units to 0 using SW1 (3-6) on outdoor controller circuit board.  
③ Remove remote controller wires and check LED2 on indoor controller board.  
• When LED2 is blinking, check the short-cut of remote controller wires.  
• When LED2 is lit, connect remote controller wires again and:  
if LED2 is blinking, remote controller is defective; if LED2 is lit, connection failure of remote controller terminal block etc. has returned to normal. |
7-5. TEST POINT DIAGRAM

7-5-1. Indoor controller board
SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

CN01  Power supply voltage (208 - 230VAC)
SWE  Emergency operation
SW1  Model selection
SW2  Capacity setting
CN32  Remote start/stop adapter
CN24  Heater control (12VDC)
CN22  For MA remote controller cable connection
       (10 - 13 VDC (Between 1 and 3.))
CN51  Centralized control
CN41  JAMA standard HA terminal A
CN44  Thermistor
       (liquid/condenser/evaporator temperature)
CN4F  Float thermistor
CN20  Thermistor (Inlet temperature)
CN3C  Indoor-outdoor transmission
       (0 - 24VDC)
CNMF  Fan motor output
       1 - 4: 310 - 340 VDC
       5 - 4: 15 VDC
       6 - 4: 0 - 6.5 VDC
       7 - 4: Stop 0 or 15 VDC
       Run 7.5 VDC
       (0 - 15 pulse)
CNP  Drain-up mechanism output (200VAC)
CN2L  LOSSNAY
CN4Y  For Fan control
CN90  Wireless remote controller

(*1)

V_{FG}  Voltage on the (-) side of PC672 and C955
       (Same with the voltage between 7 (+) and 4 (-) of CNMF)
V_{CC}  Voltage between the C955 pins 15 VDC
       (Same with the voltage between 5 (+) and 4 (-) of CNMF)
V_{SP}  Voltage between the C626 pins
       0VDC (with the fan stopped)
       1 - 6.5VDC (with the fan in operation)
       (Same with the voltage between 6 (+) and 4 (-) of CNMF)
7-6. TROUBLE CRITERION OF MAIN PARTS
SEZ-KD09NA.TH
SEZ-KD12NA.TH
SEZ-KD15NA.TH
SEZ-KD18NA.TH

<table>
<thead>
<tr>
<th>Part name</th>
<th>Check method and criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room temperature thermistor (TH1)</td>
<td>Measure the resistance with a tester. (Part temperature 10°C(50°F) ~ 30°C(86°F))</td>
</tr>
<tr>
<td>Pipe temperature thermistor/liquid (TH2)</td>
<td></td>
</tr>
<tr>
<td>Condenser/evaporator temperature thermistor (TH5)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part name</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room temperature thermistor (TH1)</td>
<td>8kΩ~20kΩ</td>
<td>Opened or short-circuited</td>
</tr>
</tbody>
</table>

Wiring diagram

Diagram showing the connections between the power supply for motor (Vm), control supply (Vcc), speed command voltage (Vsp), pulse output for rotation (PG), and ground (GND). The diagram includes the motor, regulator, Hall IC, power device, and pre-driver components.
7-7. DC FAN MOTOR (FAN MOTOR/ INDOOR CONTROLLER BOARD)

Check method of DC fan motor (fan motor / indoor controller circuit board)

1. Notes
   - High voltage is applied to the connector (CNMF) for the fan motor. Give attention to the service.
   - Do not pull out the connector (CNMF) for the motor with the power supply on.
   (It causes trouble of the indoor controller circuit board and fan motor.)

2. Self check
   Symptom : The indoor fan cannot turn around.

   Check the fuse (FUSE) on indoor controller board.

   Did the fuse blow?
   → Yes → Check the drain pump (DP)
   → Is the resistance between terminals normal?
   → Yes → Replace indoor controller board (I.B).
   → Replace fan motor (MF).
   → No → Wiring recovery

   Wiring contact check
   Contact of fan motor connector (CNMF)

   Is there no contact failure?
   → No → Replace drain pump (DP).
   → Yes → Wiring recovery

   Power supply check (Remove the connector (CNMF))
   Measure the voltage in the indoor controller circuit board.
   TEST POINT ① : \( V_{OC} \) (between 1 (+) and 4 (-) of the fan connector): \( V_{OC} \) DC310~340V
   TEST POINT ② : \( V_{CC} \) (between 5 (+) and 4 (-) of the fan connector): \( V_{CC} \) DC15V

   Is the voltage normal?
   → Yes → Replace the fan motor.
   → No → Replace indoor controller board.

   Replace indoor controller board.
   → Check the operation.
   → END
   → OK

   Check the operation of fan.
   → END
   → NG

   Replace indoor controller board.

   Replace the fan motor.
1. Control box
   1. Removing the control box cover
      (1) Remove the two fixing screws on the cover (A) to remove it.

2. Thermistor (Intake air)
   1. Remove the control box cover according to the procedure in section [1].
      (1) Pull out the thermistor holder (B) and thermistor (C) on the control box.

Exercise caution when removing heavy parts.
3. Drainpan

1. Removing the filter and the bottom plate
   (1) Push up the tab on the filter, and pull out the filter in the direction of the arrow 1.
   (2) Remove the fixing screws on the bottom plate (D), (E) to remove it.

2. Removing the drainpan
   (1) Pull out the drain pan in the direction of the arrow 1.

Note
• Drain the water out of the drain pan before removing it.
• To avoid dew condensation, use insulated screws in the places marked with circles in Figure 6.
4. Thermistor (Condenser / evaporator) (Liquid pipe)

1. Remove the drain pan according to the procedure in section [3].

2. Removing the Heat exchanger cover
   (1) Remove the four fixing screws on the heat exchanger cover (F) to remove it.

3. Removing the thermistor
   (1) Remove the thermistor (G) from the thermistor holder (H) on the copper tube.

   Thermistor size
   Liquid pipe: ø3/8inch(ø8mm)
   Condenser / evaporator: ø1/4inch(ø6mm)

Exercise caution when removing heavy parts.
5. Fan and fan motor

1. Removing the filter and the bottom plate
   (1) Push down the tab on the filter, and pull out the filter in the direction of the arrow 1.
   (2) Remove the fixing screws on the bottom plate (J) to remove it.

2. Removing the fan casing (bottom half)
   (1) Squeeze the tabs on the fan casing to remove it in the direction of arrow 2.

3. Removing the motor cable
   (1) Remove the motor cable through the rubber bush.

4. Removing the fan motor and the Sirocco fan
   (1) Remove the two motor fixing screws to remove the motor and the Sirocco fan in the direction of arrow 3.

   (2) Remove the four fan case fixing screws to take the top half of the fan casing off.

Exercise caution when removing heavy parts.
6. Bearing [KD15·18NA model only]
   1. Removing the bearing
      (1) Remove the two fixing screws on the bearing cover (K) to remove it.

      (2) Remove the two bearing retainer screws to remove the bearing.

7. Heat exchanger
   1. Remove the drain pan according to the procedure in section [3].
   2. Remove the heat exchanger cover according to the procedure in section [4] 2.
   3. Removing the cover
      (1) Remove the two fixing screws on the cover (L) to remove it.

   4. Removing the Heat exchanger
      (1) Remove the fixing screws on the heat exchanger (M) to remove it.