13. Troubleshooting
13.1 Indoor Unit Error Display

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0</td>
<td>EEPROM error</td>
</tr>
<tr>
<td>E1</td>
<td>Indoor / outdoor units communication protection</td>
</tr>
<tr>
<td>E2</td>
<td>Zero-crossing examination error</td>
</tr>
<tr>
<td>E3</td>
<td>Fan speed beyond control</td>
</tr>
<tr>
<td>E5</td>
<td>Open or short circuit of outdoor temperature sensor</td>
</tr>
<tr>
<td>E6</td>
<td>Room temperature or evaporator temperature sensor open or short circuit of</td>
</tr>
<tr>
<td>P0</td>
<td>Module protection</td>
</tr>
<tr>
<td>P1</td>
<td>Over voltage or too low voltage protection</td>
</tr>
<tr>
<td>P2</td>
<td>Compressor top protection against temperature</td>
</tr>
<tr>
<td>P3</td>
<td>Outdoor low temp. protection</td>
</tr>
<tr>
<td>P4</td>
<td>Inverter compressor drive error</td>
</tr>
</tbody>
</table>

Note: E4: Reserved function

13.1.1

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0</td>
<td>EEPROM parameter error</td>
</tr>
</tbody>
</table>

Circuit or software error on indoor control board

Replace the control board of indoor

13.1.2 circuit or software error on indoor control board

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Indoor / outdoor units communication protection</td>
</tr>
</tbody>
</table>
13.1.3

Display

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2</td>
<td>Zero-crossing examination error</td>
</tr>
</tbody>
</table>

Is power supply right?

Is connector connection good?

Yes

Indoor PCB is defective

Replace the indoor control board.

13.1.4

Display

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3</td>
<td>Fan speed beyond control</td>
</tr>
</tbody>
</table>

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

YES

Replace the module board. (The power supply of PCB is supplied by the module board.)

YES

Replace the outdoor power supply board.

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

NO

Is the voltage between P and N on inverter module 380V?

NO

Replace the outdoor power supply board.

YES

Replace the module board. (The power supply of PCB is supplied by the module board.)

NO

Replace the outdoor main PCB

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?

NO

Is the voltage on terminal CZ1 and CZ2 of the outdoor main PCB is 5V?

YES

Is the connection on outdoor control board and between indoor and outdoor unit good? Does the L, N connect good? Does the S wire connect reliably?
### 13.1.5 Display LED STATUS

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E5</td>
<td>Open or short circuit of outdoor temperature sensor</td>
</tr>
</tbody>
</table>

#### Procedure

- **Is connection to connector good?**
  - Yes: Replace the sensor
  - No: Repair connector

- If display E5 all the same, replace indoor main PCB.

### 13.1.6 Display LED STATUS

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6</td>
<td>Room temperature or evaporator temperature sensor open or short circuit</td>
</tr>
</tbody>
</table>

#### Procedure

- **Is connection to connector good?**
  - Yes: Replace the sensor
  - No: Repair connector

- If display E6 all the same, replace outdoor main PCB.

### 13.1.7 Display LED STATUS

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>Module protection</td>
</tr>
</tbody>
</table>
Is connection to connector good?

Yes

Is the wires to compressor right?

Yes

Check the voltage between P and N on inverter module. Is it about 380V?

Yes

Check the inverter module. If some component cracked or damaged?

No

Is it breakdown between P-N,P-U,P-V,N-W,N-U,N-V At inverter module

No

Check compressor

Yes

Inverter module is defective

No

Repair connector

13.1.8

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Over voltage or too low voltage protection</td>
</tr>
</tbody>
</table>

Is the power supply right?

Yes

Check the outdoor power board

Replace outdoor main PCB.

13.1.9

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2</td>
<td>Compressor top protection against temperature</td>
</tr>
</tbody>
</table>

Off: 115 °C; On: 100 °C
13.1.10

### Display LED STATUS

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P3</td>
<td>Outdoor low temp. protection</td>
</tr>
</tbody>
</table>

This is optional, factory standard unit has not this function. Unit stops when outdoor temp. is lower than -15°C and lasting time more than 60 minutes, and unit runs again when outdoor temp. is more than -12°C.

- **Is the outdoor temp. low than -15°C?**
  - No
  - Is the outdoor temp sensor right according to the table in clause 12
    - Yes: Replace the outdoor main board
    - No

13.1.11

### Display LED STATUS

<table>
<thead>
<tr>
<th>Display</th>
<th>LED STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4</td>
<td>Inverter compressor error</td>
</tr>
</tbody>
</table>

Are the U,V,W connected to compressor and inverter module right? And is the compressor feedback wires(CN514) connected to PCB good?
13.2 Diagnostic chart
After energizing, no indicator is lighted and the air conditioner can’t be operated.

Yes
Replace outdoor main PCB

If the problem can not be solved, replace inverter module

If the problem comes to again, check wingding resistance of inverter compressor, is it 0.64 ohm?

No
Replace inverter compressor

Reconnecting
After energizing, the air conditioner can not be operated.

Check if AC 220V power supply outputs to indoor PCB.

Yes

Check if AC 220V exists at the primary coil of transformer.

YES

Indoor PCB is defective.

No

Check if AC 14.5V exists at the secondary coil of transformer.

No

Take off the secondary plug of transformer, and then check if AC 14.5V exists at the secondary coil of transformer.

No

Indoor PCB is defective.

Yes

Indoor PCB is defective.
13.3 Resetting phenomenon often occurs during operation
(That is automatically entering to the status when power is on.)
The reason is that the instantaneous voltage of main chip is less than 4.5V. Check according to the following procedure:

13.4 Operation lamp flashes and Timer lamp off

13.5 Operation lamp flashes and Timer lamp on
13.6 Operation lamp off and Timer lamp flashes

After changing the main control board, check if the failure release.

The voltage of power supply is too low (less than 187V)

Power supply fault

No

Indoor PCB is defective

No

Outdoor unit fault (such as the compressor)

13.7 Operation lamp on and Timer lamp flashes

EEROM error, indoor PCB is defective.

13.8 Operation lamp flashes, Timer lamp flashes

This is alarm signal when the main chip can’t detect over-zero signal. When such failure occurs, the main control board must have fault.
## 14 Characteristic of temperature sensor

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>-10</td>
<td>62.2756</td>
<td>17</td>
<td>14.6181</td>
<td>44</td>
<td>4.3874</td>
</tr>
<tr>
<td>-9</td>
<td>58.7079</td>
<td>18</td>
<td>13.918</td>
<td>45</td>
<td>4.2126</td>
</tr>
<tr>
<td>-8</td>
<td>56.3694</td>
<td>19</td>
<td>13.2631</td>
<td>46</td>
<td>4.0459</td>
</tr>
<tr>
<td>-7</td>
<td>52.2438</td>
<td>20</td>
<td>12.6431</td>
<td>47</td>
<td>3.8867</td>
</tr>
<tr>
<td>-6</td>
<td>49.3161</td>
<td>21</td>
<td>12.0561</td>
<td>48</td>
<td>3.7348</td>
</tr>
<tr>
<td>-5</td>
<td>46.5725</td>
<td>22</td>
<td>11.5</td>
<td>49</td>
<td>3.5896</td>
</tr>
<tr>
<td>-4</td>
<td>44</td>
<td>23</td>
<td>10.9731</td>
<td>50</td>
<td>3.451</td>
</tr>
<tr>
<td>-3</td>
<td>41.5878</td>
<td>24</td>
<td>10.4736</td>
<td>51</td>
<td>3.3185</td>
</tr>
<tr>
<td>-2</td>
<td>39.8239</td>
<td>25</td>
<td>10</td>
<td>52</td>
<td>3.1918</td>
</tr>
<tr>
<td>-1</td>
<td>37.1988</td>
<td>26</td>
<td>9.5507</td>
<td>53</td>
<td>3.0707</td>
</tr>
<tr>
<td>0</td>
<td>35.2024</td>
<td>27</td>
<td>9.1245</td>
<td>54</td>
<td>2.959</td>
</tr>
<tr>
<td>1</td>
<td>33.3269</td>
<td>28</td>
<td>8.7198</td>
<td>55</td>
<td>2.8442</td>
</tr>
<tr>
<td>2</td>
<td>31.5635</td>
<td>29</td>
<td>8.3357</td>
<td>56</td>
<td>2.7382</td>
</tr>
<tr>
<td>3</td>
<td>29.9058</td>
<td>30</td>
<td>7.9708</td>
<td>57</td>
<td>2.6368</td>
</tr>
<tr>
<td>4</td>
<td>28.3459</td>
<td>31</td>
<td>7.6241</td>
<td>58</td>
<td>2.5397</td>
</tr>
<tr>
<td>5</td>
<td>26.8778</td>
<td>32</td>
<td>7.2946</td>
<td>59</td>
<td>2.4468</td>
</tr>
<tr>
<td>6</td>
<td>25.4954</td>
<td>33</td>
<td>6.9814</td>
<td>60</td>
<td>2.3577</td>
</tr>
<tr>
<td>7</td>
<td>24.1932</td>
<td>34</td>
<td>6.6835</td>
<td>61</td>
<td>2.2725</td>
</tr>
<tr>
<td>8</td>
<td>22.5662</td>
<td>35</td>
<td>6.4002</td>
<td>62</td>
<td>2.1907</td>
</tr>
<tr>
<td>9</td>
<td>21.8094</td>
<td>36</td>
<td>6.1306</td>
<td>63</td>
<td>2.1124</td>
</tr>
<tr>
<td>10</td>
<td>20.7184</td>
<td>37</td>
<td>5.8736</td>
<td>64</td>
<td>2.0373</td>
</tr>
<tr>
<td>11</td>
<td>19.6891</td>
<td>38</td>
<td>5.6296</td>
<td>65</td>
<td>1.9653</td>
</tr>
<tr>
<td>12</td>
<td>18.7177</td>
<td>39</td>
<td>5.3969</td>
<td>66</td>
<td>1.8963</td>
</tr>
<tr>
<td>13</td>
<td>17.8005</td>
<td>40</td>
<td>5.1752</td>
<td>67</td>
<td>1.830</td>
</tr>
<tr>
<td>14</td>
<td>16.9341</td>
<td>41</td>
<td>4.9639</td>
<td>68</td>
<td>1.7665</td>
</tr>
<tr>
<td>15</td>
<td>16.1156</td>
<td>42</td>
<td>4.7625</td>
<td>69</td>
<td>1.7055</td>
</tr>
<tr>
<td>16</td>
<td>15.3418</td>
<td>43</td>
<td>4.5705</td>
<td>70</td>
<td>1.6469</td>
</tr>
</tbody>
</table>