## 3. Self-diagnosis function

### Self-Diagnosis Function

**Error Indicator**
- This function indicates types of failure in self-diagnosis and occurrence of failure for air condition.
- Error mark is displayed on display window of indoor units and wired remote controller, and 7-segment LED of outdoor unit control board as shown in the table.
- If more than two troubles occur simultaneously, lower number of error code is first displayed.
- After error occurrence, if error is released, error LED is also released simultaneously.

### Error Display

1st, 2nd LED of 7-segment indicates error number, 3rd LED indicates unit number.

Ex) 211 : No.21 error of master unit  
213 : No.21 error of slave2  
011 → 051 : No.105 error of master unit

* Refer to the DX-Venitilation manual for DX-Venitilation error code

### Error Display Table

<table>
<thead>
<tr>
<th>Display</th>
<th>Title</th>
<th>Cause of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 -</td>
<td>Air temperature sensor of indoor unit</td>
<td>Air temperature sensor of indoor unit is open or short</td>
</tr>
<tr>
<td>0 2 -</td>
<td>Inlet pipe temperature sensor of indoor unit</td>
<td>Inlet pipe temperature sensor of indoor unit is open or short</td>
</tr>
<tr>
<td>0 3 -</td>
<td>Communication error : wired remote controller ↔ indoor unit</td>
<td>Failing to receive wired remote controller signal in indoor unit PCB</td>
</tr>
<tr>
<td>0 4 -</td>
<td>Drain pump</td>
<td>Malfunction of drain pump</td>
</tr>
<tr>
<td>0 5 -</td>
<td>Communication error : outdoor unit ↔ indoor unit</td>
<td>Failing to receive outdoor unit signal in indoor unit PCB</td>
</tr>
<tr>
<td>0 6 -</td>
<td>Outlet pipe temperature sensor of indoor unit</td>
<td>Outlet pipe temperature sensor of indoor unit is open or short</td>
</tr>
<tr>
<td>0 7 -</td>
<td>Different operation mode</td>
<td>Operation mode between indoor unit and outdoor unit is different</td>
</tr>
<tr>
<td>0 9 -</td>
<td>Indoor EEPROM Error</td>
<td>In case when the serial number marked on EEPROM of Indoor unit is 0 or FFFFFF</td>
</tr>
<tr>
<td>1 0 -</td>
<td>Poor fan motor operation</td>
<td>Disconnecting the fan motor connector/Failure of indoor fan motor lock</td>
</tr>
<tr>
<td>1 7 -</td>
<td>Inlet Air temperature sensor of FAU</td>
<td>Air temperature sensor of indoor unit is open or short</td>
</tr>
<tr>
<td>2 1 1</td>
<td>Master Outdoor Unit Inverter Compressor IPM Fault</td>
<td>Master Outdoor Unit Inverter Compressor Drive IPM Fault</td>
</tr>
<tr>
<td>2 1 2</td>
<td>Slave1 Outdoor Unit Inverter Compressor IPM Fault</td>
<td>Slave1 Outdoor Unit Inverter Compressor Drive IPM Fault</td>
</tr>
<tr>
<td>2 1 3</td>
<td>Slave2 Outdoor Unit Inverter Compressor IPM Fault</td>
<td>Slave2 Outdoor Unit Inverter Compressor Drive IPM Fault</td>
</tr>
<tr>
<td>2 1 4</td>
<td>Slave3 Outdoor Unit Inverter Compressor IPM Fault</td>
<td>Slave3 Outdoor Unit Inverter Compressor Drive IPM Fault</td>
</tr>
<tr>
<td>2 2 1</td>
<td>Inverter Board Input Over Current(RMS) of Master Outdoor Unit</td>
<td>Master Outdoor Unit Inverter Board Input Current excess (RMS)</td>
</tr>
<tr>
<td>2 2 2</td>
<td>Inverter Board Input Over Current(RMS) of Slave1 Outdoor Unit</td>
<td>Slave1 Outdoor Unit Inverter Board Input Current excess (RMS)</td>
</tr>
<tr>
<td>2 2 3</td>
<td>Inverter Board Input Over Current(RMS) of Slave2 Outdoor Unit</td>
<td>Slave2 Outdoor Unit Inverter Board Input Current excess (RMS)</td>
</tr>
<tr>
<td>2 2 4</td>
<td>Inverter Board Input Over Current(RMS) of Slave3 Outdoor Unit</td>
<td>Slave3 Outdoor Unit Inverter Board Input Current excess (RMS)</td>
</tr>
</tbody>
</table>

### Note
- Refer to the DX-Venitilation manual for DX-Venitilation error code.
### Self-diagnosis function

<table>
<thead>
<tr>
<th>Display</th>
<th>Title</th>
<th>Cause of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Master Outdoor Unit Inverter Compressor DC link Low Voltage1</td>
<td>DC charging is not performed at Master Outdoor Unit after starting relay turn on.</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Inverter Compressor DC link Low Voltage</td>
<td>DC charging is not performed at Slave1 Outdoor Unit after starting relay turn on.</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Inverter Compressor DC link Low Voltage</td>
<td>DC charging is not performed at Slave2 Outdoor Unit after starting relay turn on.</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Inverter Compressor DC link Low Voltage</td>
<td>DC charging is not performed at Slave3 Outdoor Unit after starting relay turn on.</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit High Pressure Switch</td>
<td>System is turned off by Master Outdoor Unit high pressure switch.</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit High Pressure Switch</td>
<td>System is turned off by Slave1 Outdoor Unit high pressure switch.</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit High Pressure Switch</td>
<td>System is turned off by Slave2 Outdoor Unit high pressure switch.</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit High Pressure Switch</td>
<td>System is turned off by Slave3 Outdoor Unit high pressure switch.</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit Input Voltage High/Low Voltage</td>
<td>Master Outdoor Unit input voltage is over 487V or below 270V</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Input Voltage High/Low Voltage</td>
<td>Slave1 Outdoor Unit input voltage is over 487V or below 270V</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Input Voltage High/Low Voltage</td>
<td>Slave2 Outdoor Unit input voltage is over 487V or below 270V</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Input Voltage High/Low Voltage</td>
<td>Slave3 Outdoor Unit input voltage is over 487V or below 270V</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit Inverter Compressor Start Failure</td>
<td>The First Start Failure by Master Outdoor Unit Inverter Compressor Abnormality</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Inverter Compressor Start Failure</td>
<td>The First Start Failure by Slave1 Outdoor Unit Inverter Compressor Abnormality</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Inverter Compressor Start Failure</td>
<td>The First Start Failure by Slave2 Outdoor Unit Inverter Compressor Abnormality</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Inverter Compressor Start Failure</td>
<td>The First Start Failure by Slave3 Outdoor Unit Inverter Compressor Abnormality</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit Inverter DC link High Voltage</td>
<td>System is turned off by Master Outdoor Unit DC Voltage Over Charging</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Inverter DC link High Voltage</td>
<td>System is turned off by Slave1 Outdoor Unit DC Voltage Over Charging</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Inverter DC link High Voltage</td>
<td>System is turned off by Slave2 Outdoor Unit DC Voltage Over Charging</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Inverter DC link High Voltage</td>
<td>System is turned off by Slave3 Outdoor Unit DC Voltage Over Charging</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit Inverter Compressor Over Current</td>
<td>Master Outdoor Unit Inverter Compressor Fault OR Drive Fault</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Inverter Compressor Over Current</td>
<td>Slave1 Outdoor Unit Inverter Compressor Fault OR Drive Fault</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Inverter Compressor Over Current</td>
<td>Slave2 Outdoor Unit Inverter Compressor Fault OR Drive Fault</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Inverter Compressor Over Current</td>
<td>Slave3 Outdoor Unit Inverter Compressor Fault OR Drive Fault</td>
</tr>
<tr>
<td>Display</td>
<td>Title</td>
<td>Cause of Error</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Master Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
<td>System is turned off by Master Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
<td>System is turned off by Slave1 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
<td>System is turned off by Slave2 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
<td>System is turned off by Slave3 Outdoor Unit Constant Speed Compressor2 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>Master Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
<td>System is turned off by Master Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave1 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave2 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave3 Outdoor Unit Inverter Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>Master Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
<td>System is turned off by Master Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave1 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave2 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
<td>System is turned off by Slave3 Outdoor Unit Constant Speed Compressor1 High Discharge Temperature</td>
</tr>
<tr>
<td>3</td>
<td>High Pressure of Master Outdoor Unit</td>
<td>System is turned off by excessive increase of high pressure of Master Outdoor Unit</td>
</tr>
<tr>
<td>2</td>
<td>High Pressure of Slave1 Outdoor Unit</td>
<td>System is turned off by excessive increase of high pressure of Slave1 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>High Pressure of Slave2 Outdoor Unit</td>
<td>System is turned off by excessive increase of high pressure of Slave2 Outdoor Unit</td>
</tr>
<tr>
<td>4</td>
<td>High Pressure of Slave3 Outdoor Unit</td>
<td>System is turned off by excessive increase of high pressure of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>Low Pressure of Master Outdoor Unit</td>
<td>System is turned off by excessive decrease of low pressure of Master Outdoor Unit</td>
</tr>
<tr>
<td>2</td>
<td>Low Pressure of Slave1 Outdoor Unit</td>
<td>System is turned off by excessive decrease of low pressure of Slave1 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>Low Pressure of Slave2 Outdoor Unit</td>
<td>System is turned off by excessive decrease of low pressure of Slave2 Outdoor Unit</td>
</tr>
<tr>
<td>4</td>
<td>Low Pressure of Slave3 Outdoor Unit</td>
<td>System is turned off by excessive decrease of low pressure of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>Master Outdoor Unit Low Condensing Ratio Limited</td>
<td>Master Outdoor Unit stayed under low condensing limit for 3 minutes</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Low Condensing Ratio Limited</td>
<td>Slave1 Outdoor Unit stayed under low condensing limit for 3 minutes</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Low Condensing Ratio Limited</td>
<td>Slave2 Outdoor Unit stayed under low condensing limit for 3 minutes</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Low Condensing Ratio Limited</td>
<td>Slave3 Outdoor Unit stayed under low condensing limit for 3 minutes</td>
</tr>
</tbody>
</table>
### Self-diagnosis function

<table>
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<tr>
<th>Display</th>
<th>Title</th>
<th>Cause of Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 0</td>
<td>1 Master Outdoor Unit Inverter Compressor CT Sensor Fault</td>
<td>Master Outdoor Unit Inverter Compressor CT Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit Inverter Compressor CT Sensor Fault</td>
<td>Slave1 Outdoor Unit Inverter Compressor CT Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 Outdoor Unit Inverter Compressor CT Sensor Fault</td>
<td>Slave2 Outdoor Unit Inverter Compressor CT Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit Inverter Compressor CT Sensor Fault</td>
<td>Slave3 Outdoor Unit Inverter Compressor CT Sensor open or short</td>
</tr>
<tr>
<td>4 1</td>
<td>1 Master Outdoor Unit Inverter Compressor Discharge Temperature Sensor Fault</td>
<td>Master Outdoor Unit Inverter Compressor Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit Inverter Compressor Discharge Temperature Sensor Fault</td>
<td>Slave1 Outdoor Unit Inverter Compressor Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 Outdoor Unit Inverter Compressor Discharge Temperature Sensor Fault</td>
<td>Slave2 Outdoor Unit Inverter Compressor Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit Inverter Compressor Discharge Temperature Sensor Fault</td>
<td>Slave3 Outdoor Unit Inverter Compressor Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>4 2</td>
<td>1 Master Outdoor Unit Low Pressure Sensor Fault</td>
<td>Master Outdoor Unit Low Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit Low Pressure Sensor Fault</td>
<td>Slave1 Outdoor Unit Low Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 Outdoor Unit Low Pressure Sensor Fault</td>
<td>Slave2 Outdoor Unit Low Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit Low Pressure Sensor Fault</td>
<td>Slave3 Outdoor Unit Low Pressure Sensor open or short</td>
</tr>
<tr>
<td>4 3</td>
<td>1 Master Outdoor Unit High Pressure Sensor Fault</td>
<td>Master Outdoor Unit High Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit High Pressure Sensor Fault</td>
<td>Slave1 Outdoor Unit High Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 Outdoor Unit High Pressure Sensor Fault</td>
<td>Slave2 Outdoor Unit High Pressure Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit High Pressure Sensor Fault</td>
<td>Slave3 Outdoor Unit High Pressure Sensor open or short</td>
</tr>
<tr>
<td>4 4</td>
<td>1 Master Outdoor Unit Air Temperature Sensor Fault</td>
<td>Master Outdoor Unit Air Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit Air Temperature Sensor Fault</td>
<td>Slave1 Outdoor Unit Air Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 Outdoor Unit Air Temperature Sensor Fault</td>
<td>Slave2 Outdoor Unit Air Temperature Sensor open or short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit Air Temperature Sensor Fault</td>
<td>Slave3 Outdoor Unit Air Temperature Sensor open or short</td>
</tr>
<tr>
<td>Display</td>
<td>Title</td>
<td>Cause of Error</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>4 5</td>
<td>Master Outdoor Unit Heat Exchanger Temperature Sensor (Front side) Fault</td>
<td>Master Outdoor Unit Heat Exchanger Temperature Sensor (Front side) open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) Fault</td>
<td>Slave1 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) open or short</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) Fault</td>
<td>Slave2 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) open or short</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) Fault</td>
<td>Slave3 Outdoor Unit Heat Exchanger Temperature Sensor (Front side) open or short</td>
</tr>
<tr>
<td>4 6</td>
<td>Master Outdoor Unit Suction Temperature Sensor Fault</td>
<td>Master Outdoor Unit Suction Temperature Sensor open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Suction Temperature Sensor Fault</td>
<td>Slave1 Outdoor Unit Suction Temperature Sensor open or short</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Suction Temperature Sensor Fault</td>
<td>Slave2 Outdoor Unit Suction Temperature Sensor open or short</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Suction Temperature Sensor Fault</td>
<td>Slave3 Outdoor Unit Suction Temperature Sensor open or short</td>
</tr>
<tr>
<td>4 7</td>
<td>Master Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor Fault</td>
<td>Master Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor Fault</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor Fault</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor Fault</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor1 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>4 8</td>
<td>Master Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor Fault</td>
<td>Master Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor Fault</td>
<td>Slave1 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor Fault</td>
<td>Slave2 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor Fault</td>
<td>Slave3 Outdoor Unit Constant Speed Compressor2 Discharge Temperature Sensor open or short</td>
</tr>
<tr>
<td>4 9</td>
<td>Master Outdoor Unit Faulty IPM Temperature Sensor</td>
<td>Master Outdoor Unit IPM Temperature Sensor short/open</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Faulty IPM Temperature Sensor</td>
<td>Slave1 Outdoor Unit IPM Temperature Sensor short/open</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Faulty IPM Temperature Sensor</td>
<td>Slave2 Outdoor Unit IPM Temperature Sensor short/open</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Faulty IPM Temperature Sensor</td>
<td>Slave3 Outdoor Unit IPM Temperature Sensor short/open</td>
</tr>
<tr>
<td>Display</td>
<td>Title</td>
<td>Cause of Error</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>----------------</td>
</tr>
<tr>
<td>5 0</td>
<td>Omitting connection of R, S, T power of Master Outdoor Unit</td>
<td>Omitting connection of Master outdoor unit</td>
</tr>
<tr>
<td>2</td>
<td>Omitting connection of R, S, T power of Slave1 Outdoor Unit</td>
<td>Omitting connection of Slave1 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>Omitting connection of R, S, T power of Slave2 Outdoor Unit</td>
<td>Omitting connection of Slave2 Outdoor Unit</td>
</tr>
<tr>
<td>4</td>
<td>Omitting connection of R, S, T power of Slave3 Outdoor Unit</td>
<td>Omitting connection of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>5 1</td>
<td>Excessive capacity of indoor units</td>
<td>Excessive connection of indoor units compared to capacity of Outdoor Unit</td>
</tr>
<tr>
<td>5 2</td>
<td>Communication error : inverter PCB → Main PCB</td>
<td>Failing to receive inverter signal at main PCB of Master Outdoor Unit</td>
</tr>
<tr>
<td>5 3</td>
<td>Communication error : inverter PCB → Main PCB</td>
<td>Failing to receive inverter signal at main PCB of Slave1 Outdoor Unit</td>
</tr>
<tr>
<td>5 4</td>
<td>Communication error : inverter PCB → Main PCB</td>
<td>Failing to receive inverter signal at main PCB of Slave2 Outdoor Unit</td>
</tr>
<tr>
<td>5 5</td>
<td>Communication error : inverter PCB → Main PCB</td>
<td>Failing to receive inverter signal at main PCB of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>5 6</td>
<td>Communication error : indoor unit → main PCB of Outdoor Unit</td>
<td>Failing to receive indoor unit signal at main PCB of Outdoor Unit</td>
</tr>
<tr>
<td>5 7</td>
<td>Master Outdoor Unit Communication Error with Inverter Controller</td>
<td>Master Outdoor Unit Controller part cannot receive inverter control signals (usually happens after on-boarding)</td>
</tr>
<tr>
<td>5 8</td>
<td>Slave1 Outdoor Unit Communication Error with Inverter Controller</td>
<td>Slave1 Outdoor Unit Controller part cannot receive inverter control signals (usually happens after on-boarding)</td>
</tr>
<tr>
<td>5 9</td>
<td>Slave2 Outdoor Unit Communication Error with Inverter Controller</td>
<td>Slave2 Outdoor Unit Controller part cannot receive inverter control signals (usually happens after on-boarding)</td>
</tr>
<tr>
<td>5 10</td>
<td>Slave3 Outdoor Unit Communication Error with Inverter Controller</td>
<td>Slave3 Outdoor Unit Controller part cannot receive inverter control signals (usually happens after on-boarding)</td>
</tr>
<tr>
<td>5 11</td>
<td>Mixing Installation of Sub Outdoor Unit</td>
<td>Mixing Installation of Old Sub Outdoor Unit and New Slave Outdoor Unit</td>
</tr>
<tr>
<td>Display</td>
<td>Title</td>
<td>Cause of Error</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>6 0</td>
<td>Inverter PCB EEPROM Error of Master Outdoor Unit</td>
<td>Access Error of Inverter PCB of Master Outdoor Unit</td>
</tr>
<tr>
<td>2</td>
<td>Inverter PCB EEPROM Error of Slave1 Outdoor Unit</td>
<td>Access Error of Inverter PCB of Slave1 Outdoor Unit</td>
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<tr>
<td>3</td>
<td>Inverter PCB EEPROM Error of Slave2 Outdoor Unit</td>
<td>Access Error of Inverter PCB of Slave2 Outdoor Unit</td>
</tr>
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<td>4</td>
<td>Inverter PCB EEPROM Error of Slave3 Outdoor Unit</td>
<td>Access Error of Inverter PCB of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>1</td>
<td>Master Outdoor Unit Fan Lock</td>
<td>Restriction of Master Outdoor Unit</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Fan Lock</td>
<td>Restriction of Slave1 Outdoor Unit</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Fan Lock</td>
<td>Restriction of Slave2 Outdoor Unit</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Fan Lock</td>
<td>Restriction of Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>6 7</td>
<td>Constant1 CT Sensor Error of Master Outdoor Unit</td>
<td>Constant1 CT Sensor open or short of Master Outdoor Unit</td>
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<td>2</td>
<td>Constant1 CT Sensor Error of Slave1 Outdoor Unit</td>
<td>Constant1 CT Sensor open or short of Slave1 Outdoor Unit</td>
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<td>Constant1 CT Sensor Error of Slave2 Outdoor Unit</td>
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<td>Constant1 CT Sensor Error of Slave3 Outdoor Unit</td>
<td>Constant1 CT Sensor open or short of Slave3 Outdoor Unit</td>
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<td>6 9</td>
<td>Constant2 CT Sensor Error of Master Outdoor Unit</td>
<td>Constant2 CT Sensor open or short of Master Outdoor Unit</td>
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<td>2</td>
<td>Constant2 CT Sensor Error of Slave1 Outdoor Unit</td>
<td>Constant2 CT Sensor open or short of Slave1 Outdoor Unit</td>
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<td>3</td>
<td>Constant2 CT Sensor Error of Slave2 Outdoor Unit</td>
<td>Constant2 CT Sensor open or short of Slave2 Outdoor Unit</td>
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<td>Constant2 CT Sensor Error of Slave3 Outdoor Unit</td>
<td>Constant2 CT Sensor open or short of Slave3 Outdoor Unit</td>
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<tr>
<td>7 0</td>
<td>Instant Over Current(Peak) of Master Outdoor Unit PFC</td>
<td>Instant Over Current(Peak) of Master Outdoor Unit PFC</td>
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<tr>
<td>2</td>
<td>Instant Over Current(Peak) of Slave1 Outdoor Unit PFC</td>
<td>Instant Over Current(Peak) of Slave1 Outdoor Unit PFC</td>
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<td>3</td>
<td>Instant Over Current(Peak) of Slave2 Outdoor Unit PFC</td>
<td>Instant Over Current(Peak) of Slave2 Outdoor Unit PFC</td>
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<td>4</td>
<td>Instant Over Current(Peak) of Slave3 Outdoor Unit PFC</td>
<td>Instant Over Current(Peak) of Slave3 Outdoor Unit PFC</td>
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<td>7 5</td>
<td>Master Outdoor Unit Fan CT Sensor Error</td>
<td>Master Outdoor Unit Fan CT Sensor open or short</td>
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<td>Slave1 Outdoor Unit Fan CT Sensor Error</td>
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<td>3</td>
<td>Slave2 Outdoor Unit Fan CT Sensor Error</td>
<td>Slave2 Outdoor Unit Fan CT Sensor open or short</td>
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<td>Master Outdoor Unit Fan DC Link High Voltage Error</td>
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<tr>
<td>7 6</td>
<td>Slave1 Outdoor Unit Fan DC Link High Voltage Error</td>
<td>Slave1 Outdoor Unit Fan DC Link High Voltage Error</td>
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<tr>
<td>7 6</td>
<td>Slave2 Outdoor Unit Fan DC Link High Voltage Error</td>
<td>Slave2 Outdoor Unit Fan DC Link High Voltage Error</td>
</tr>
<tr>
<td>7 6</td>
<td>Slave3 Outdoor Unit Fan DC Link High Voltage Error</td>
<td>Slave3 Outdoor Unit Fan DC Link High Voltage Error</td>
</tr>
<tr>
<td>7 7</td>
<td>Master Outdoor Unit Fan Over Current Error</td>
<td>Master Outdoor Unit Fan Current is over 5A</td>
</tr>
<tr>
<td>7 7</td>
<td>Slave1 Outdoor Unit Fan Over Current Error</td>
<td>Slave1 Outdoor Unit Fan is over 5A</td>
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<td>7 7</td>
<td>Slave2 Outdoor Unit Fan Over Current Error</td>
<td>Slave2 Outdoor Unit Fan is over 5A</td>
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<td>7 7</td>
<td>Slave3 Outdoor Unit Fan Over Current Error</td>
<td>Slave3 Outdoor Unit Fan is over 5A</td>
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<td>7 9</td>
<td>Master Outdoor Unit Fan Start Failure Error</td>
<td>Master Outdoor Unit Fan First Position Sensing Failure</td>
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<td>7 9</td>
<td>Slave1 Outdoor Unit Fan Start Failure Error</td>
<td>Slave1 Outdoor Unit Fan First Position Sensing Failure</td>
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<tr>
<td>7 9</td>
<td>Slave2 Outdoor Unit Fan Start Failure Error</td>
<td>Slave2 Outdoor Unit Fan First Position Sensing Failure</td>
</tr>
<tr>
<td>7 9</td>
<td>Slave3 Outdoor Unit Fan Start Failure Error</td>
<td>Slave3 Outdoor Unit Fan First Position Sensing Failure</td>
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<td>8 6</td>
<td>Master Outdoor Unit Main PCB EEPROM Error</td>
<td>Communication Fail Between Master Outdoor Unit Main MICOM and EEPROM or omitting EEPROM</td>
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<tr>
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<td>Slave1 Outdoor Unit Main PCB EEPROM Error</td>
<td>Communication Fail Between Slave1 Outdoor Unit Main MICOM and EEPROM or omitting EEPROM</td>
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<tr>
<td>8 6</td>
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<td>Communication Fail Between Slave2 Outdoor Unit Main MICOM and EEPROM or omitting EEPROM</td>
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<tr>
<td>8 6</td>
<td>Slave3 Outdoor Unit Main PCB EEPROM Error</td>
<td>Communication Fail Between Slave3 Outdoor Unit Main MICOM and EEPROM or omitting EEPROM</td>
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<tr>
<td>8 7</td>
<td>Master Outdoor Unit Fan PCB EEPROM Error</td>
<td>Communication Fail Between Master Outdoor Unit Fan MICOM and EEPROM or omitting EEPROM</td>
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<td>Slave1 Outdoor Unit Fan PCB EEPROM Error</td>
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<td>Slave3 Outdoor Unit Fan PCB EEPROM Error</td>
<td>Communication Fail Between Slave3 Outdoor Unit Fan MICOM and EEPROM or omitting EEPROM</td>
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</thead>
<tbody>
<tr>
<td>1 0 4</td>
<td>Communication Error Between Master Outdoor Unit and Other Outdoor Unit</td>
<td>Failing to receive Slave Unit signal at main PCB of Master Outdoor Unit</td>
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<tr>
<td>2</td>
<td>Communication Error Between Slave1 Outdoor Unit and Other Outdoor Unit</td>
<td>Failing to receive master and other Slave Unit signal at main PCB of Slave1 Outdoor Unit</td>
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<td>3</td>
<td>Communication Error Between Slave2 Outdoor Unit and Other Outdoor Unit</td>
<td>Failing to receive master and other Slave Unit signal at main PCB of Slave2 Outdoor Unit</td>
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<td>4</td>
<td>Communication Error Between Slave3 Outdoor Unit and Other Outdoor Unit</td>
<td>Failing to receive master and other Slave Unit signal at main PCB of Slave3 Outdoor Unit</td>
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<tr>
<td>1 0 5</td>
<td>Master Outdoor Unit Fan PCB Communication Error</td>
<td>Failing to receive fan signal at main PCB of master unit.</td>
</tr>
<tr>
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<td>Slave1 Outdoor Unit Fan PCB Communication Error</td>
<td>Failing to receive fan signal at main PCB of Slave1 unit.</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Fan PCB Communication Error</td>
<td>Failing to receive fan signal at main PCB of Slave2 unit.</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 Outdoor Unit Fan PCB Communication Error</td>
<td>Failing to receive fan signal at main PCB of Slave3 unit.</td>
</tr>
<tr>
<td>1 0 6</td>
<td>Master Outdoor Unit FAN IPM Fault Error</td>
<td>Instant Over Current at Master Outdoor Unit FAN IPM</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit FAN IPM Fault Error</td>
<td>Instant Over Current at Slave1 Outdoor Unit FAN IPM</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit FAN IPM Fault Error</td>
<td>Instant Over Current at Slave2 Outdoor Unit FAN IPM</td>
</tr>
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<td>Instant Over Current at Slave3 Outdoor Unit FAN IPM</td>
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<tr>
<td>1 0 7</td>
<td>Master Outdoor Unit Fan DC Link Low Voltage Error</td>
<td>Master Outdoor Unit Fan DC Link Input Voltage is under 380V</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Fan DC Link Low Voltage Error</td>
<td>Slave1 Outdoor Unit Fan DC Link Input Voltage is under 380V</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Outdoor Unit Fan DC Link Low Voltage Error</td>
<td>Slave2 Outdoor Unit Fan DC Link Input Voltage is under 380V</td>
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<td>Slave3 Outdoor Unit Fan DC Link Low Voltage Error</td>
<td>Slave3 Outdoor Unit Fan DC Link Input Voltage is under 380V</td>
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<tr>
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<td>Master Outdoor Unit Liquid pipe Temperature Sensor Error</td>
<td>Liquid pipe temperature sensor of Master Outdoor Unit is open or short</td>
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<td>Slave1 Outdoor Unit Liquid pipe Temperature Sensor Error</td>
<td>Liquid pipe temperature sensor of slave1 Outdoor Unit is open or short</td>
</tr>
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<td>3</td>
<td>Slave2 Outdoor Unit Liquid pipe Temperature Sensor Error</td>
<td>Liquid pipe temperature sensor of slave2 Outdoor Unit is open or short</td>
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<td>Slave3 Outdoor Unit Liquid pipe Temperature Sensor Error</td>
<td>Liquid pipe temperature sensor of slave3 Outdoor Unit is open or short</td>
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<tr>
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<td>1 Master Outdoor Unit Subcooling Outlet Temperature Sensor Error</td>
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<td>2 Slave1 Outdoor Unit Subcooling Outlet Temperature Sensor Error</td>
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<td>Slave2 Outdoor Unit Subcooling Outlet Temperature Sensor open or short</td>
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<td>Slave3 Outdoor Unit Subcooling Outlet Temperature Sensor open or short</td>
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<tr>
<td>1 5 1</td>
<td>1 Failure of operation mode conversion at Master Outdoor Unit</td>
<td>Pressure unbalance between Outdoor Units</td>
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<tr>
<td></td>
<td>2 Failure of operation mode conversion at Slave1 Outdoor Unit</td>
<td>Pressure unbalance between Outdoor Units</td>
</tr>
<tr>
<td></td>
<td>3 Failure of operation mode conversion at Slave2 Outdoor Unit</td>
<td>Pressure unbalance between Outdoor Units</td>
</tr>
<tr>
<td></td>
<td>4 Failure of operation mode conversion at Slave3 Outdoor Unit</td>
<td>Pressure unbalance between Outdoor Units</td>
</tr>
<tr>
<td>1 5 3</td>
<td>1 Master upper part heat exchanger temperature sensor error</td>
<td>Master Outdoor Unit upper part temperature sensor open/short</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 upper part heat exchanger temperature sensor error</td>
<td>Slave1 Outdoor Unit upper part temperature sensor open/short</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 upper part heat exchanger temperature sensor error</td>
<td>Slave2 Outdoor Unit upper part temperature sensor open/short</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 upper part heat exchanger temperature sensor error</td>
<td>Slave3 Outdoor Unit upper part temperature sensor open/short</td>
</tr>
<tr>
<td>1 5 4</td>
<td>1 Master lower part heat exchanger temperature sensor error</td>
<td>Master Outdoor Unit lower part temperature sensor open/short</td>
</tr>
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<td></td>
<td>2 Slave1 lower part heat exchanger temperature sensor error</td>
<td>Slave1 Outdoor Unit lower part temperature sensor open/short</td>
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<td></td>
<td>3 Slave2 lower part heat exchanger temperature sensor error</td>
<td>Slave2 Outdoor Unit lower part temperature sensor open/short</td>
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<tr>
<td></td>
<td>4 Slave3 lower part heat exchanger temperature sensor error</td>
<td>Slave3 Outdoor Unit lower part temperature sensor open/short</td>
</tr>
<tr>
<td>1 7 3</td>
<td>1 Master Outdoor Unit Constant Speed Compressor Fault</td>
<td>Comp locking, Check Valve leakage, comp dielectric breakdown at Master Outdoor Unit</td>
</tr>
<tr>
<td></td>
<td>2 Slave1 Outdoor Unit Constant Speed Compressor Fault</td>
<td>Comp locking, Check Valve leakage, comp dielectric at Slave1 Outdoor Unit</td>
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<tr>
<td></td>
<td>3 Slave2 Outdoor Unit Constant Speed Compressor Fault</td>
<td>Comp locking, Check Valve leakage, comp dielectric at Slave2 Outdoor Unit</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 Outdoor Unit Constant Speed Compressor Fault</td>
<td>Comp locking, Check Valve leakage, comp dielectric at Slave3 Outdoor Unit</td>
</tr>
<tr>
<td>1 7 4</td>
<td>1 Master outdoor unit rated speed 2 condenser over-current</td>
<td>Master Outdoor Unit rated speed 2 condenser burned / locked or fault by over-current</td>
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<tr>
<td></td>
<td>2 Slave1 outdoor unit rated speed 2 condenser over-current</td>
<td>Slave1 Outdoor Unit rated speed 2 condenser burned / locked or fault by over-current</td>
</tr>
<tr>
<td></td>
<td>3 Slave2 outdoor unit rated speed 2 condenser over-current</td>
<td>Slave2 Outdoor Unit rated speed 2 condenser burned / locked or fault by over-current</td>
</tr>
<tr>
<td></td>
<td>4 Slave3 outdoor unit rated speed 2 condenser over-current</td>
<td>Slave3 Outdoor Unit rated speed 2 condenser burned / locked or fault by over-current</td>
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<th>Title</th>
<th>Cause of Error</th>
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<tr>
<td>1 8 2</td>
<td>Master outdoor unit Main Board Main-Sub Micom communication error</td>
<td>Master Outdoor Unit Main Board Main-Sub Micom communication failed</td>
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<td>Slave1 outdoor unit Main Board Main-Sub Micom communication error</td>
<td>Slave1 Outdoor Unit Main Board Main-Sub Micom communication failed</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 outdoor unit Main Board Main-Sub Micom communication error</td>
<td>Slave2 Outdoor Unit Main Board Main-Sub Micom communication failed</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 outdoor unit Main Board Main-Sub Micom communication error</td>
<td>Slave3 Outdoor Unit Main Board Main-Sub Micom communication failed</td>
</tr>
<tr>
<td>1 8 4</td>
<td>Master Inv. oil balance pipe Temperature Sensor error</td>
<td>Master Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Inv. oil balance pipe Temperature Sensor error</td>
<td>Slave1 Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
<tr>
<td>3</td>
<td>Slave2 Inv. oil balance pipe Temperature Sensor error</td>
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<tr>
<td>4</td>
<td>Slave3 Inv. oil balance pipe Temperature Sensor error</td>
<td>Slave3 Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
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<td>1 8 5</td>
<td>Master const.1 oil balance pipe Temperature Sensor error</td>
<td>Master Outdoor Unit oil balance temperature Sensor open or short</td>
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<tr>
<td>2</td>
<td>Slave1 const.1 oil balance pipe Temperature Sensor error</td>
<td>Slave1 Outdoor Unit oil balance temperature Sensor open or short</td>
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<tr>
<td>3</td>
<td>Slave2 const.1 oil balance pipe Temperature Sensor error</td>
<td>Slave2 Outdoor Unit oil balance temperature Sensor open or short</td>
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<tr>
<td>4</td>
<td>Slave3 const.1 oil balance pipe Temperature Sensor error</td>
<td>Slave3 Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
<tr>
<td>1 8 6</td>
<td>Master const.2 oil balance pipe Temperature Sensor error</td>
<td>Master Outdoor Unit oil balance temperature Sensor open or short</td>
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<tr>
<td>2</td>
<td>Slave1 const.2 oil balance pipe Temperature Sensor error</td>
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<tr>
<td>3</td>
<td>Slave2 const.2 oil balance pipe Temperature Sensor error</td>
<td>Slave2 Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
<tr>
<td>4</td>
<td>Slave3 const.2 oil balance pipe Temperature Sensor error</td>
<td>Slave3 Outdoor Unit oil balance temperature Sensor open or short</td>
</tr>
<tr>
<td>1 9 3</td>
<td>Excessive increase of Master Outdoor Unit Fan PCB Heat Sink Temperature</td>
<td>Master Outdoor Unit Fan Inverter PCB Temperature is Over 95°C</td>
</tr>
<tr>
<td>2</td>
<td>Excessive increase of Slave1 Outdoor Unit Fan PCB Heat Sink Temperature</td>
<td>Slave1 Outdoor Unit Fan Inverter PCB Temperature is Over 95°C</td>
</tr>
<tr>
<td>3</td>
<td>Excessive increase of Slave2 Outdoor Unit Fan PCB Heat Sink Temperature</td>
<td>Slave2 Outdoor Unit Fan Inverter PCB Temperature is Over 95°C</td>
</tr>
<tr>
<td>4</td>
<td>Excessive increase of Slave3 Outdoor Unit Fan PCB Heat Sink Temperature</td>
<td>Slave3 Outdoor Unit Fan Inverter PCB Temperature is Over 95°C</td>
</tr>
<tr>
<td>1 9 4</td>
<td>Master Outdoor Unit Fan PCB Heat Sink Temperature Sensor Error</td>
<td>Master Outdoor Unit Fan PCB Heat Sink Temperature Sensor open or short</td>
</tr>
<tr>
<td>2</td>
<td>Slave1 Outdoor Unit Fan PCB Heat Sink Temperature Sensor Error</td>
<td>Slave1 Outdoor Unit Fan PCB Heat Sink Temperature Sensor open or short</td>
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<td>3</td>
<td>Slave2 Outdoor Unit Fan PCB Heat Sink Temperature Sensor Error</td>
<td>Slave2 Outdoor Unit Fan PCB Heat Sink Temperature Sensor open or short</td>
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<td>Error No.</td>
<td>Error Type</td>
<td>Error Point</td>
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<tr>
<td>01</td>
<td>Indoor unit air sensor error</td>
<td>Indoor unit sensor is open/short</td>
</tr>
<tr>
<td>02</td>
<td>Indoor unit pipe inlet sensor error</td>
<td></td>
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<tr>
<td>06</td>
<td>Indoor unit pipe outlet sensor error</td>
<td></td>
</tr>
</tbody>
</table>

**Error diagnosis and countermeasure flow chart**

1. Is sensor properly connected to PCB?  
   - Yes: Connect properly to PCB  
   - No: Is the resistance value of sensor normal?*  
     - Yes: Change the PCB  
     - No: Change the sensor

* In case the value is more than 100kΩ (open) or less than 100Ω (short), Error occurs

Refer: Resistance value maybe change according to temperature of temp sensor,
   It shows according to criteria of current temperature(±5% margin) → Normal
   Air temp sensor: 10°C = 20.7kΩ : 25°C= 10kΩ : 50°C= 3.4kΩ
   Pipe temp sensor: 10°C = 10kΩ : 25°C= 5kΩ : 50°C= 1.8kΩ

**CN-ROOM**: Indoor air temp sensor  
**CN-PIPE2**: Pipe outlet temp sensor  
**CN-PIPE1**: Pipe inlet temp sensor

Measure the resistance of outlet pipe temp sensor.
### Error diagnosis and countermeasure flow chart

<table>
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<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 03        | No communication between cabled remote controller & indoor unit | The remote controller did not receive the signal from indoor unit during specific time | 1. Remote controller fault  
2. Indoor unit PCB fault  
3. Connector fault, Wrong connection  
4. Communication cable problem |

If there is no remote controller to replace : Use another unit’s remote controller doing well

Check cable : Contact failure of connected portion or extension of cable are main cause

Check any surrounded noise (check the distance with main power cable)

→ make safe distance from the devices generate electromagnetic wave

After replacing indoor unit PCB, do Auto Addressing & input unit’s address if connected to central controller.
(All the indoor units connected should be turned on before Auto Addressing)

*CN-REMO* : Remote controller connection

* The PCB can differ from model to model. Check from the right source.
### Error diagnosis and countermeasure flow chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 04        | Drain pump error    | Float switch is open due to rising of condensate water level because of drain pump fault or drain pipe clogging | 1. Drain pump/float switch fault  
2. Improper drain pipe location, clogging of drain pipe  
3. Indoor unit PCB fault |

#### Checking float switch

- **(Low position ➔ short ➔ 0 ohm)**
- **(High position ➔ Open)**

* If the float goes up higher than a half of float switch then the circuit is open & the unit is stopped automatically.
A: Point to check rotating

*** Indoor PCB drain pump connector
(Check input of 220V)
(Marked as **CN-DPUMP**)

Float switch connector

Float switch Housing (**CN-FLOAT**)

[***] Standard of drain pipe head height / slope
1. Auto addressing is not done
2. Communication cable is not connected
3. Short circuit of communication cable
4. Indoor unit communication circuit fault
5. Outdoor unit communication circuit fault
6. Not enough distance between power and communication cable?

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 05       | Indoor & Outdoor unit communication error       | No signal communication between indoor & outdoor units. | 1. Auto addressing is not done  
2. Communication cable is not connected  
3. Short circuit of communication cable  
4. Indoor unit communication circuit fault  
5. Outdoor unit communication circuit fault  
6. Not enough distance between power and communication cable? |

**Error diagnosis and countermeasure flow chart**

- Does all the IDUs show same error code CH05?  
  - Yes: Is outdoor PCB LED blinking?  
    - Yes: Check the main power supply at the ODU terminal block?  
      - Yes: Re connect communication cable  
      - No: Outdoor PCB fault Replace after checking  
    - No: Is main circuit breaker off?  
      - Yes: Improper connection of power supply cable  
      - No: Check if the communication cable is properly connected to indoor / outdoor terminal block?*  
        - Yes: Re connect communication cable  
        - No: Check the insulation of inverter / constant compressor and replace if required  
  - No: Is total number of indoor units connected displayed after auto addressing?  
    - No: Replace the PCB of indoor unit displayed error  
    - Yes: Re-connect after check the communication cable of indoor unit displayed error**  

* (Note1) communication from IDU is normal if voltage fluctuation(-9V ~ +9V) exists when checking DC voltage of communication terminal between IDU and ODU  
** If the DC voltage between communication terminal A, B of indoor unit is fluctuate within (-9V~+9V) then communication from outdoor unit is normal
Error diagnosis and countermeasure flow chart

1. Outdoor main PCB dip switch setting *
2. Does error code disappear after set operation mode same?**
3. Replace Indoor PCB***

---

* Check mode selection setting of wired remote controller.
** Outdoor main PCB dip switch no.5 (Cooling) or no.6 (heating) is in On, different mode operation error may occur because the operation mode is fixed by dip switch setting.
*** Dissolution method CH07 with remote controller

1) Error removal method: Turn off remote controller by pressing the On/Off button on the cabled remote controller.
   The error code will be removed automatically after few seconds.
   With cableless remote controller: Turn off indoor unit, and then turn on by changing the operation mode. The error will disappear.

**** After replacing the indoor unit PCB, make sure to be done to do Auto addressing and input the address of central control
***** If ODU Dry Contact function is set, different mode operation error may be occurred because the operation mode is fixed.
## Error diagnosis and countermeasure flow chart

- Replace the indoor unit PCB, and then make sure to perform Auto addressing and input the address of central control

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>09</td>
<td>Indoor unit EEPROM error</td>
<td></td>
<td>1. Error developed in communication between the micro-processor and the EEPROM on the surface of the PCB.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. ERROR due to the EEPROM damage</td>
</tr>
</tbody>
</table>
### Error No. 10: Indoor unit BLDC fan motor failure

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Indoor unit BLDC fan motor failure</td>
<td>Indoor BLDC fan motor feedback signal is absent</td>
<td>1. Motor connector connection fault</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(for 50 sec.)</td>
<td>2. Indoor PCB fault</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Motor fault</td>
</tr>
</tbody>
</table>

#### Error diagnosis and countermeasure flow chart

1. **Is connector connection proper?**
   - Yes: **Is fan motor normal?**
     - Yes: Replace indoor unit PCB **
     - No: Replace indoor unit fan motor
   - No: Connect properly

* It is normal when check hall sensor of indoor fan motor as shown below

**Each terminal with the tester**

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Tester</th>
<th>Normal resistance (±10%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ -</td>
<td>TH chassis</td>
<td>TD chassis</td>
</tr>
<tr>
<td>1 4</td>
<td>∞</td>
<td>∞</td>
</tr>
<tr>
<td>5 6</td>
<td>hundreds kΩ</td>
<td>hundreds kΩ</td>
</tr>
<tr>
<td>6 4</td>
<td>∞</td>
<td>∞</td>
</tr>
<tr>
<td>7 4</td>
<td>hundreds kΩ</td>
<td>hundreds kΩ</td>
</tr>
</tbody>
</table>

<Checking connection state of fan motor connector>

** Replace the indoor unit PCB, and then make sure to do Auto addressing and input the address of central control
(Notice: The connection of motor connector to PCB should be done under no power supplying to PCB)
**Troubleshooting Guide**

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>21* Master 211 Slave1 212 Slave2 213 Slave3 214</td>
<td>Inverter PCB Assy IPM Fault occur</td>
<td>IPM self protection circuit activation</td>
<td>1. Over current detection at Inverter compressor(U,V,W)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Overcurrent/IPM overheating/Vcc low voltage)</td>
<td>2. Compressor damaged (insulation damaged/Motor damaged)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. IPM overheating (Heat sink fan damaged/Heat sink fan connector disconnected/Heat sink disassembled)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Inverter compressor terminal disconnected or loose</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. Inverter PCB assembly damaged</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. ODU input current low</td>
</tr>
</tbody>
</table>

### Error diagnosis and countermeasure flow chart

1. **Are there any power wire connections normal?**
   - **No**
     - 1. Check R/S/T/N wiring conditions
     - Rewire them if abnormality found.
   - **Yes**
     - **Are the resistance Between each phase and insulation resistance of Inverter compressor normal?**
       - **No**
         - 1. Check resistance between each terminal of compressor (U-V:0.438±7%, V-W:0.433±7%, W-U:0.435±7% (25℃))
         - 2. Check insulation resistance between compressor terminal and pipe (over 50M)
         - Replace compressor if abnormality found
       - **Yes**
         - **Is compressor Wire connection condition normal?**
           - **No**
             - 1. Check inverter PCB assembly U,V,W connector connection condition
             - 2. Check wire disconnection and wiring
             - 3. Check compressor terminal connection condition (bad contact)
             - Reassemble if abnormality found
           - **Yes**
             - **Is inverter heat sink cooling fan normal?**
               - **No**
                 - 1. Check heat sink cooling fan connector connection condition
                 - 2. Check heat sink cooling fan wire connection and wiring
                 - Reassemble and change wire if abnormality found
                 - 3. Check heat sink cooling fan output voltage during compressor operation
                 - Replace main PCB if output voltage isn't AC 220V
               - **Yes**
                 - **Is inverter PCB assembly normal?**
                   - **No**
                     - Check inverter PCB assembly IPM normality.
                     - Replace inverter PCB assembly if abnormality found.
                   - **Yes**
                     - Recheck power and installation condition
* Measuring resistance between each terminal of compressor

* Compressor wire connector connection point

* IPM joining point

Check joining condition
### Error Diagnosis and Countermeasure Flow Chart

1. **Is installation condition normal?**
   - Yes
   - No

2. **Are the resistance Between each phase and insulation resistance of Inverter compressor normal?**
   - Yes
   - No

3. **Is compressor Wire connection condition normal?**
   - Yes
   - No

4. **Is inverter PCB assembly power connection normal?**
   - Yes
   - No

5. **Is input voltage normal?**
   - Yes
   - No

6. **Is inverter PCB assembly normal?**
   - Yes
   - No

---

**Main Reasons**

1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge)
2. Compressor damage (Insulation damage/Motor damage)
3. Input voltage low
4. Power Line Misconnection
5. Inverter PCB Assembly damage (Input current sensing part)
* Measuring resistance between each terminal of compressor

* Inverter PCB & bridge diode wiring

* Compressor wire connector connection

* Measuring input voltage

Check joining condition
### Error Diagnosis and Countermeasure Flow Chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>23*</td>
<td>Inverter Compressor DC Link Low Voltage</td>
<td>DC Voltage isn't charged after starting relay on</td>
<td>1. DC Link terminal misconnection/terminal contact fault 2. Starting relay damage 3. Condenser damage 4. Inverter PCB assembly damage (DC Link voltage sensing part) 5. Input voltage low</td>
</tr>
</tbody>
</table>

#### Error Diagnosis and Countermeasure Flow Chart

1. **Are there any power wire connections normal?**
   - **Yes**
   - Check R/S/T/N wiring conditions
   - → Rewire them if abnormality found.
   - **No**
   - 1. Check R/S/T/N wiring conditions
   - → Rewire them if abnormality found.

2. **Is input voltage normal?**
   - **Yes**
   - Check R–S/S–T/T–R phase voltage is 380V 10% R–N/S–N/T–N phase voltage is 220V 10%
   - → Check connection condition and wiring if power is abnormal
   - **No**
   - 1. Check bridge diode connection condition
   - 2. Check wire disconnection and wiring
   - → Reassemble if abnormally found

3. **Is bridge diode connection normal?**
   - **Yes**
   - Check connection between inverter PCB assembly and bridge diode (misconnection, disconnection)
   - → wiring again if abnormality found
   - **No**
   - Check connection between inverter PCB assembly and bridge diode (misconnection, disconnection)
   - → wiring again if abnormality found

4. **Is inverter PCB assembly power connection normal?**
   - **Yes**
   - Check inverter PCB assembly IPM normality
   - → Replace inverter PCB assembly if abnormality found
   - **No**
   - Check inverter PCB assembly IPM normality.
   - → Replace inverter PCB assembly if abnormality found

5. **Is inverter PCB assembly normal?**
   - **Yes**
   - Recheck power and installation condition
   - **No**
   - Recheck power and installation condition
* Inverter PCB & bridge diode wiring

* Measuring input voltage
Error diagnosis and countermeasure flow chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 (Main) 109 (Sub1) 140 (Sub2) 154 (Sub3)</td>
<td>Excessive rise of discharge pressure in outdoor compressor</td>
<td>Compressor off due to the high pressure switch in outdoor unit</td>
<td>1. Defective high pressure switch 2. Defective fan of indoor unit or outdoor unit 3. Check valve of compressor clogged 4. Pipe distortion due to the pipe damage 5. Refrigerant overcharge 6. Defective LEV at the indoor or outdoor unit 7. Covering or clogging (Outdoor covering during the cooling mode / Indoor unit filter clogging during the heating mode) 8. SVC valve clogging 9. Defective outdoor PCB</td>
</tr>
</tbody>
</table>

**Main PCB**

- Is high pressure switch connector connected to PCB?*
  - Yes: Connect securely
  - No: Replace high pressure switch connector on Main PCB
- Is high pressure switch connector short during off time?**
  - Yes: Replace connecting cable
  - No: Re-check momentary problem or not
- Is SVC valve open?
  - Yes: Open SVC valve
  - No: Re-check momentary problem or not
- Is this error appeared again after reset?
  - Yes: Replace PCB
    - CH24: inverter compressor PCB
    - CH109~154: sub unit PCB
  - No: Replace high pressure sensor
- Is high pressure more than 2500kPa at manifold gauge?
  - Yes: Replace PCB
  - No: Replace high pressure sensor
- Is high pressure of LGMV similar as at manifold gauge?
  - Yes: Replace high pressure switch connector
  - No: Check pipe is blocked or not and take measure

* Note 1) High pressure switch connector on Main PCB
** Note 2) Check short with high pressure switch connector
*** Note 2) Check short with high pressure switch connector
## Error Diagnosis and Countermeasure Flow Chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>25* Master 251 Slave1 252 Slave2 253 Slave3 254</td>
<td>Input Voltage high/low</td>
<td>Input voltage is over limited value of the product (173V or less, 289V or more)</td>
<td>1. Input voltage abnormal (T-N) 2. Outdoor unit inverter PCB assembly damage (input voltage sensing part)</td>
</tr>
</tbody>
</table>

1. Check R/S/T/N wiring conditions  
   → Rewire them if abnormality found.

2. Check  
   R−S−S−T/T−R phase voltage is 380V 10%  
   R−N/S−N/T−N phase voltage is 220V 10%  
   → Check connection condition and wiring if power is abnormal

3. Check connection between inverter PCB assembly and bridge diode (misconnection, disconnection)  
   → wiring again if abnormality found

4. Replace inverter PCB assembly.

Recheck power and installation condition
### Troubleshooting Guide

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>26*</td>
<td>Inverter compressor starting failure</td>
<td>Starting failure because of compressor abnormality</td>
<td>1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge)</td>
</tr>
<tr>
<td>Master</td>
<td>261</td>
<td></td>
<td>2. Compressor damage (Insulation damage/Motor damage)</td>
</tr>
<tr>
<td>Slave1</td>
<td>262</td>
<td></td>
<td>3. Compressor wiring fault</td>
</tr>
<tr>
<td>Slave2</td>
<td>263</td>
<td></td>
<td>4. ODU inverter PCB damage (CT)</td>
</tr>
<tr>
<td>Slave3</td>
<td>264</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Error Diagnosis and Countermeasure Flow Chart

1. **Is installation condition normal?**
   - No: Are there any power wire connections normal?
     - No: Are the resistance Between each phase and insulation resistance of Inverter compressor normal?
       - No: Is compressor Wire connection condition normal?
         - No: Is inverter PCB assembly normal?
           - No: Recheck power and Installation condition
           - Yes: Is inverter PCB assembly normal?
             - Yes: Check inverter PCB assembly IPM normality
               → Replace inverter PCB assembly
             - No: Check inverter PCB assembly U,V,W connector connection condition
               1. Check resistance between each terminal of compressor (U-V:0.438±7%, V-W:0.433±7%, W-U:0.435±7% 7(25℃))
               2. Check insulation resistance between compressor terminal and pipe (over 50M )
               → Replace compressor if abnormality found
         - Yes: Check inverter PCB assembly U,V,W connector connection condition
           → Replace inverter PCB assembly
   - Yes: Are there any power wire connections normal?
     - Yes: 1. Check Pipe clogging/distortion
               2. Check Covering (Indoor/Outdoor Unit)
               3. Check EEV connector assemble condition/normal operation
               4. Check refrigerant pressure
               → Reassemble or manage if abnormality found

2. **Check R/S/T/N wiring conditions**
   → Rewire them if abnormality found.

3. **Check inverter PCB assembly U,V,W connector connection condition**
   → Replace inverter PCB assembly

4. **Check inverter PCB assembly IPM normality**
   → Replace inverter PCB assembly

---

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* Measuring resistance between each terminal of compressor

* Compressor wire connection
# Troubleshooting Guide

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>28* Master 281 Slave1 Slave2 Slave3 Slave4</td>
<td>Inverter DC link high voltage error</td>
<td>Inv PCB DC link voltage supplied over 780V</td>
<td>1. Input voltage abnormal (R,S,T,N) 2. ODU inverter PCB damage (DC Link voltage sensing part)</td>
</tr>
</tbody>
</table>

## Error Diagnosis and Countermeasure Flow Chart

1. Are there any power wire connections normal?
   - Yes
     - Is input voltage normal?
       - Yes
         - Is inverter PCB assembly normal?
           - Yes
             - Recheck power and installation condition
           - No
             - Replace inverter PCB assembly
       - No
         - Check connection condition and wiring if power is abnormal
           - Check R–S/S–T/T–R phase voltage is 380V ±10%
           - Check R–N/S–N/T–N phase voltage is 220V ±10%
           - 1. Check R/S/T/N wiring conditions
             2. Check Noise filter wiring conditions
             → Rewire them if abnormality found.

2. Measuring input voltage
3. Noise filter wiring

* Measuring input voltage
* Noise filter wiring
### Troubleshooting Guide

<table>
<thead>
<tr>
<th>Error No.</th>
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<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>29*</td>
<td>Inverter compressor over current</td>
<td>Inverter compressor input current is over 30A</td>
<td>1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge)</td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td>2. Compressor damage (Insulation damage/Motor damage)</td>
</tr>
<tr>
<td>291</td>
<td></td>
<td></td>
<td>3. Input voltage low</td>
</tr>
<tr>
<td>Slave1</td>
<td></td>
<td></td>
<td>4. ODU inverter PCB assembly damage</td>
</tr>
<tr>
<td>Slave2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slave3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slave4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Error Diagnosis and Countermeasure Flow Chart

1. **Is installation condition normal?**
   - Yes
   - No
   → 1. Check Pipe clogging/distortion
   → 2. Check Covering (Indoor/Outdoor Unit)
   → 3. Check EEV connector assemble condition/normal operation
   → 4. Check refrigerant pressure
   → Reassemble or manage if abnormality found

2. **Are the resistance between each phase and insulation resistance of Inverter compressor normal?**
   - Yes
   → 1. Check resistance between each terminal of compressor (U-V:0.438±7%, V-W:0.433±7%, W-U:0.435±7% 7(25℃))
   → 2. Check insulation resistance between compressor terminal and pipe (over 50M )
   → Replace compressor if abnormality found
   - No
   → Reassemble or manage if abnormality found

3. **Is compressor Wire connection condition normal?**
   - Yes
   → 1. Check inverter PCB assembly U,V,W connector connection condition
   → 2. Check wire disconnection and wiring
   → 3. Check compressor terminal connection condition (bad contact)
   → Reassemble if abnormality found
   - No
   → Check R~S/S~T/T~R phase voltage is 380V 10%
   → R~N/S~N/T~N phase voltage is 220V 10%
   → Check connection condition and wiring if power is abnormal

4. **Is input voltage normal?**
   - Yes
   → Recheck power and installation condition
   - No
   → Check inverter PCB assembly IPM normality
   → Replace inverter PCB assembly
* Measuring resistance between each terminal of compressor

* Compressor wire connection

* Measuring input voltage
### Error diagnosis and countermeasure flow chart

#### Error Type: Master Outdoor Unit Constant Speed Compressor 2 Discharge Temperature Sensor Fault

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>30*</td>
<td>Master Outdoor Unit Constant Speed Compressor 2 Discharge Temperature Sensor</td>
<td>System is turned off by Master Outdoor Unit Constant Speed Compressor 2 Discharge Temperature Sensor</td>
<td>1. Constant Speed Compressor 2 Discharge Temperature Sensor Fault 2. Refrigerant Short/Leakage 3. EEV Fault</td>
</tr>
</tbody>
</table>

#### Error Type: Over-increase discharge temperature of inverter compressor at main outdoor unit

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>32*</td>
<td>Over-increase discharge temperature of inverter compressor at main outdoor unit</td>
<td>Compressor is off because of over-increase discharge temperature of inverter compressor</td>
<td>1. Temperature sensor defect of inverter compressor discharge pipe 2. Refrigerant shortage / leak 3. EEV defect 4. Liquid injection valve defect</td>
</tr>
</tbody>
</table>

#### Error Type: Over-increase discharge temperature of constant compressor 1 at main constant outdoor and sub constant outdoor unit

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>33*</td>
<td>Over-increase discharge temperature of constant compressor 1 at main constant outdoor and sub constant outdoor unit</td>
<td>Compressor is off because of over-increase discharge temperature of constant compressor 1 at main and sub outdoor unit</td>
<td>1. Temperature sensor defect of constant compressor 1 discharge pipe? 2. Refrigerant shortage/leak 3. EEV defect 4. Liquid injection valve defect</td>
</tr>
</tbody>
</table>

#### Flowchart

1. **Is the amount of refrigerant normal?**
   - No: **Is there pipe crack or trace of leakage?**
     - No: **Change the amount of refrigerant**
     - Yes: **Weld / reconnect the cracked portion and recharge refrigerant**
   - Yes: **Is the resistance of discharge temperature sensor normal?**

2. **Is the resistance of discharge temperature sensor normal?**
   - No: **Replace discharge temperature sensor**
   - Yes: **Is EEV in outdoor unit normal at heating operation?**

3. **Is EEV in outdoor unit normal at heating operation?**
   - No: **Replace outdoor unit EEV**
   - Yes: **Does liquid injection corresponded operate normally?**

4. **Does liquid injection corresponded operate normally?**
   - No: **Check liquid injection corresponded**
   - Yes: **Is there pipe (strainer etc.) clogging?**

5. **Is there pipe (strainer etc.) clogging?**
   - No: **Check another components and operation conditions / Take measures**
   - Yes: **Replace strainer**

* Resistance value of discharge temperature sensor:
  - $10^\circ C = 362k\Omega$, $25^\circ C = 200k\Omega$, $50^\circ C = 82k\Omega$, $100^\circ C = 18.5k\Omega$
## Error diagnosis and countermeasure flow chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 34*       | Over-increase of discharge pressure of compressor | Error happens because of 3 times successive compressor off due to over-increase of high pressure by high pressure sensor | 1. Defect of high pressure sensor  
2. Defect of indoor or outdoor unit fan  
3. Deformation because of damage of refrigerant pipe  
4. Over-charged refrigerant  
5. Defective indoor / outdoor unit EEV  
6. When blocked  
- Outdoor unit is blocked during cooling  
- Indoor unit filter is blocked during heating  
7. SVC valve is clogged  
8. PCB defect of outdoor unit  
10. Indoor unit pipe temperature sensor defect |

### Diagram

1. **Is service valve opened?**
   - **No** → Open service valve
   - **Yes** → **Are communication cable / pipe connection normal?**
     - **No** → Check and repair communication cable / pipe connection
     - **Yes** → **Is refrigerant amount normal?**
       - **No** → Adjust refrigerant amount
       - **Yes** → **Is fan normal?**
         - **(Indoor fan during heating  
           Outdoor fan during cooling)**
           - **No** → Replace related parts  
             (Refer to Error 105~107)
           - **Yes** → **Is filter blocked**
             - **(Heating: indoor,  
               Cooling: outdoor heat exchanger)**
               - **No** → Clean indoor filter (heating)  
                 /outdoor heat exchanger (cooling)?
               - **Yes** → **Is value of high pressure sensor same as Manifold value (Is it high actually)?**
                 - **No** → Replace sensor of high pressure
                 - **Yes** → Check indoor unit LEV  
                   Check indoor unit PCB  
                   Check in/outdoor installation condition
### Error diagnosis and countermeasure flow chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 35*       |            |             | 1. Defective low pressure sensor  
| Master 351|            |             | 2. Defective outdoor/indoor unit fan  
| Slave1 352|            |             | 3. Refrigerant shortage/leakage  
| Slave2 353|            |             | 4. Deformation because of damage of refrigerant pipe  
| Slave3 354|            |             | 5. Defective indoor / outdoor unit EEV  
|           |            |             | 6. Covering / clogging  
|           |            |             | (outdoor unit covering during the cooling mode/  
|           |            |             | indoor unit filter clogging during heating mode)  
|           |            |             | 7. SVC valve clogging  
|           |            |             | 8. Defective outdoor unit PCB  
|           |            |             | 9. Defective indoor unit pipe sensor  

- **Error happens because of 3 times successive compressor off due to excessive drop of low pressure by the low pressure sensor**

- **Excessive drop of discharge pressure of compressor**

* If the temperature difference between inlet and outlet of strainer is so large that frost or ice formation can be seen or confirmed then clogging of strainer should be checked  
(Notice: it is not full ice forming of strainer, in case that there is not at inlet portion but at outlet portion)
### Error Diagnosis and Countermeasure Flow Chart

1. **Are there any power wire connections normal?**
   - **No**
   - 1. Check R/S/T/N wiring conditions
      2. Check Noise filter wiring conditions
      → Rewire them if abnormality found.

   - **Yes**

2. **Is input voltage normal?**
   - **No**
   - Check
      - R–S–T–R phase voltage is 380V±10%  
      - R–N/S–N/T–N phase voltage is 220V±10%  
      → Check connection condition and wiring if power is abnormal

   - **Yes**

3. **Is inverter PCB assembly normal?**
   - **No**
   - Replace inverter PCB assembly

   - **Yes**

   → **Recheck power and installation condition**

---

* Measuring input voltage

* LGMV Part

* Inverter PCB assembly
### Error diagnosis and countermeasure flow chart

1. Sensor connection to PCB is normal?
   - Yes
   - No
     - Is the resistance of sensor normal?*
       - Yes
       - No
         - Replace sensor
         - Is sensor resistance value same as temperature value of LGMV?
           - Yes
           - No
             - Replace corresponding outdoor PCB
     - Replace corresponding sensor

* Error is generated if the resistance is more than 5M(open) and less than 2k (short)

Note: Standard values of resistance of sensors at different temperatures (5% variation)
- 10C = 362k
- 25C = 200k
- 50C = 82k
- 100C = 18.5k

---

Check the resistance of sensors:
- Inverter compressor discharge temperature sensor
- Constant speed compressor 2 discharge temperature sensor

---

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Error diagnosis and countermeasure flow chart

1. Is sensor connected to PCB correctly?
   - Yes
     - After replacement of outdoor unit main PCB is the system normal?
       - Yes
         - END
       - No
         - Replace corresponding pressure sensor
   - No
     - Connect sensor to PCB correctly

Error No. | Error Type | Error Point | Main Reasons
---|---|---|---
42* Master 421 Slave1 422 Slave2 423 Slave3 424 | Sensor error of low pressure | Abnormal value of sensor (Open/Short) | 1. Bad connection of low pressure connector 2. Defect of low pressure connector (Open/Short) 3. Defect of outdoor PCB
43* Master 431 Slave1 432 Slave2 433 Slave3 434 | Sensor error of high pressure | Abnormal value of sensor (Open/Short) | 1. Bad connection of high pressure connector 2. Defect of high pressure connector (Open/Short) 3. Defect of outdoor PCB
### Error diagnosis and countermeasure flow chart

1. **Is sensor connected to PCB correctly??**
   - No: Connect sensor to PCB correctly
   - Yes: **Is sensor value correct??**
     - No: Replace sensor
     - Yes: Replace corresponding outdoor unit PCB

* If value is 100kΩ † (open) or 100Ω ‡ (short), error occurs

**NB:** Resistance value of temperature sensor change according to temperature

It is normal if value shown as below (±5% error)

- Sensor of air temperature: 10°C = 20.7kΩ  : 25°C= 10kΩ : 50°C= 3.4kΩ
- Sensor of piping temperature: 10°C = 10kΩ  : 25°C= 5Ω : 50°C= 1.8kΩ
### Error Diagnosis and Countermeasure Flow Chart

1. **Are there any power wire connections normal?**
   - **Yes:**
     - **Are the resistance Between each phase and insulation resistance of Inverter compressor normal?**
       - **Yes:**
         - **Is compressor Wire connection condition normal?**
           - **No:** Check inverter PCB assembly U,V,W connector connection condition
           - **Yes:**
             - Check inverter PCB assembly IPM normality.
             - Replace inverter PCB assembly if abnormality found.
       - **No:**
         - Check inverter PCB assembly IPM normality.
         - Replace inverter PCB assembly if abnormality found.
   - **No:**
     - Check inverter PCB assembly IPM normality.
     - Replace inverter PCB assembly if abnormality found.

2. **Recheck power and installation condition**

---

* Measuring input voltage

* Noise filter wiring

* Main PCB power connection

* Field Fault Case

* R-Phase Terminal Changed Color.
<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>51</td>
<td>Over-Capacity (Sum of indoor unit capacity is more than outdoor capacity)</td>
<td>Sum of indoor unit capacity exceed outdoor unit capacity specification</td>
<td>1. 130% more than outdoor unit rated capacity 2. Wrong connection of communication cable/piping 3. Control error of slave outdoor unit Dip switch 4. Power supply defect of slave unit PCB 5. Defect of outdoor unit PCB</td>
</tr>
</tbody>
</table>

### Error diagnosis and countermeasure flow chart

1. Yes
   - Is capacity sum of indoor units less than 130% of outdoor unit capacity at LGMV?
     - No
       - Are quantity and capacity of indoor units installed same as the data of LGMV?
         - Yes
           - Check following dip S/W setting is on
             - Slave1: No.5,7
             - Slave2: No. 6,7
             - Slave3: No. 5,6,7
           - Adjust the capacity of indoor and outdoor unit
         - No
           - Adjust corresponding DIP switch
     - Yes
       - Is power of Slave PCB On? (Check LED blinking)
         - Yes
           - Is main power really supplied? (Terminal Block T-N)
             - Yes
               - Check and replace PCB, Line Fuse, Transformer
             - No
               - Re-connect
         - No
           - Is communication cables between outdoor units connected correctly?
             - Yes
               - Is error code released in order(Slave2➡Slave1➡Main) after power reset?
                 - Yes
                   - End
                 - No
                   - Replace Main or Slave PCB
             - No
               - Re-connect

2. * In order to check communication cables between outdoor units, check in order as below:
   - PCB connectors ➔ terminal block ➔ communication cables

---

Troubleshooting Guide

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<table>
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<th>Error No.</th>
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<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>52*</td>
<td>Communication error between (Inverter PCB → Main PCB)</td>
<td>Main controller of Master unit of Master unit can't receive signal from inverter controller</td>
<td>1. Power cable or communication cable is not connected 2. Defect of outdoor Main fuse/Noise Filter 3. Defect of outdoor Main / inverter PCB</td>
</tr>
</tbody>
</table>

**Error diagnosis and countermeasure flow chart**

- Is communication LED (Yellow) of inverter compressor PCB on?
  - Yes → Is noise filter or fuse normal?
    - Yes → Replace inverter compressor PCB
    - No → Is communication cable connected correctly?
      - Yes → Re-connect communication cable
      - No → Is MAIN PCB normal?
        - Yes → Replace inverter compressor PCB
        - No → Replace MAIN PCB

* The method of checking MAIN PCB and inverter compressor PCB (If normal, communication LED blinks)
1. Communication cables are not connected
2. Communication cables are short / open
3. Defect of outdoor Main / indoor PCB
4. ODU/IDU Main PCB Damage.
5. communication Wire Connection Fault.

### Error diagnosis and countermeasure flow chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 53        | Communication error (Indoor unit → Main PCB) | In case Main PCB can’t receive signal from indoor unit | 1. Communication cables are not connected  
2. Communication cables are short / open  
3. Defect of outdoor Main / indoor PCB  
4. ODU/IDU Main PCB Damage.  
5. communication Wire Connection Fault. |

In case of CH53, almost happened with CH05, the indoor units not operated actually are normal so check with the same method of CH05. and additionally check as shown as below and above flow chart:

- Although the quantity of indoor units installed is same as LGMV data there may be a few indoor units with which the number of communication is not increased with LGMV
- Although the quantity of indoor units installed is not same as LGMV data, and if communication of the indoor unit displayed at LGMV is done well then the indoor unit suspected to have some problem (and is not appear at LGMV) may have following problems
  1. wrong connection of communication cable or power cable
  2. fault of power / PCB / communication cable
  3. duplication of indoor unit number
- If communication is not doing well wholly then the Auto Addressing is not done
- The case that CH53 appear at indoor unit also Auto Addressing is not done so indoor unit address may be duplicated

* After replacement of indoor unit PCB, Auto Addressing should be done, if central controller is installed then the central control address also should be input.
In case that only communication PCB is replaced above process is not needed
### Error diagnosis and countermeasure flow chart

1. **Is connection and phase order of power cables to main / slave outdoor unit correct?**
   - Yes
   - No → Connect correctly

2. **Is connection and phase order of power distribution panel correct?**
   - Yes
   - No → Connect power cables in distribution panel correctly

3. **Is CH 54 occurred again after reset MAIN circuit breaker?**
   - Yes
   - No → End

4. **Is main PCB fuse normal?**
   - Yes
   - No → Replace Fuse

   - Replace main PCB

---

* Check power cable connection state, phase (R-S-T) order, power supply state in control box of product

** Check power cable connection state, phase order, power supply state in distribution panel
1. Bad Connection Between Inv and Main
2. Communication Wire Noise Effect
3. ODU Main PCB Damage
4. ODU Inv PCB Damage

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>57* Master 571</td>
<td>Communication error : Main PCB</td>
<td>Failing to receive inverter signal at main PCB of Outdoor Unit</td>
<td>1. Bad Connection Between Inv and Main</td>
</tr>
<tr>
<td>Slave1 572</td>
<td>--&gt; Inverter PCB</td>
<td></td>
<td>2. Communication Wire Noise Effect</td>
</tr>
<tr>
<td>Slave2 573</td>
<td></td>
<td></td>
<td>3. ODU Main PCB Damage</td>
</tr>
<tr>
<td>Slave3 574</td>
<td></td>
<td></td>
<td>4. ODU Inv PCB Damage</td>
</tr>
</tbody>
</table>

Error diagnosis and countermeasure flow chart

- Are there any communication wire connections normal?
  - No:
    - 1. Check communication wiring conditions
    - 2. Check connector conditions
    - Rewire them if abnormality found.
  - Yes:
    - Is inverter PCB assembly normal?
      - No:
        - 1. Replace Inverter PCB
      - Yes:
        - Is there any error when power reset?
          - Yes:
            - 1. Replace Main PCB
          - No:
            - Recheck power and installation condition

Inverter/Fan PCB

Main PCB
### Error Diagnosis and Countermeasure Flow Chart

1. Is Dip switch setting normal?
   - Yes
     - Are there setting with Master→Slave1→Slave2→Slave3?
       - Yes
         - Is there any error when power reset?
           - Yes
             - Recheck installation condition
           - No
             - 1. Replace Main PCB
         - No
           - Set with Master→Slave1→Slave2→Slave3
     - No
       - 1. Set the most capacitor ODU for Master
   - No
     - 1. Replace Main PCB

### *Dip Switch Setting*

#### Slave1

<table>
<thead>
<tr>
<th>ON</th>
<th>ON</th>
<th>ON</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

#### Slave2

<table>
<thead>
<tr>
<th>ON</th>
<th>ON</th>
<th>ON</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

#### Slave3

<table>
<thead>
<tr>
<th>ON</th>
<th>ON</th>
<th>ON</th>
<th>ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Error No.</td>
<td>Error Type</td>
<td>Error Point</td>
<td>Main Reasons</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------</td>
<td>--------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>60*</td>
<td>Inverter PCB EEPROM error</td>
<td>EEPROM Access error and Check SUM error</td>
<td>1. EEPROM contact defect/wrong insertion</td>
</tr>
<tr>
<td>Master 601 Slave1 602 Slave2 603 Slave3 604</td>
<td></td>
<td></td>
<td>2. Different EEPROM Version</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. ODU inverter PCB assembly damage</td>
</tr>
</tbody>
</table>

**Error Diagnosis and Countermeasure Flow Chart**

1. **Is EEPROM insertion normal?**
   - Yes
   - **Is inverter PCB assembly normal?**
     - Yes
     - Recheck power and installation condition
     - **Is EEPROM insertion normal?**
       - Yes
     - **Is inverter PCB assembly normal?**
       - No
       - Replace inverter PCB assembly
     - **Is EEPROM insertion normal?**
       - No
       - 1. Check EEPROM insert direction/connection condition
       - 2. Check EEPROM Check SUM
       - Replace if abnormality found

* Inverter EEPROM inserting point

* Right inserting direction of inverter EEPROM

* Note: Replace after power off
## Error Diagnosis and Countermeasure Flow Chart

### Fan Lock Error

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 67*      | Fan Lock Error      | Fan RPM is 10RPM or less for 5 sec. when ODU fan starts or 40 RPM or less after fan starting. | 1. Fan motor defect / assembly condition abnormal  
2. Wrong connection of fan motor connector (Hall sensor, U,V,W output)  
3. Reversing rotation after RPM target apply  
4. Fan PCB assembly defect  
5. Fan lock by Heavy Snowfall. |

![Flow Chart Diagram](image-url)
<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>69*</td>
<td>Constant 1 CT Sensor Error</td>
<td>Constant 1 CT Sensor open or short of Outdoor Unit</td>
<td>Constant 1 CT Sensor Error</td>
</tr>
<tr>
<td>Master 691</td>
<td>Slave1 692</td>
<td>Slave2 693</td>
<td>Slave3 694</td>
</tr>
</tbody>
</table>

| 70*      | Constant Speed Compressor 2 CT Sensor Error | Constant Speed Compressor 2 CT Sensor Open/short | 1. Constant Speed Compressor 2 CT Sensor defect |
| Master 701 | Slave1 702 | Slave2 703 | Slave3 704 |

**Error Diagnosis and Countermeasure Flow Chart**

- Is constant speed compressor CT Sensor connection condition normal?
  - Yes: Recheck power and installation condition
  - No: Check constant speed compressor CT Sensor wiring condition and locking
## Troubleshooting Guide

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>73*</td>
<td>AC input instant over current error (Matter of software)</td>
<td>Inverter PCB input 3 phase power current is over 50A (peak) for 2ms</td>
<td>1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge) 2. Compressor damage (Insulation damage/Motor damage) 3. Input voltage abnormal (R,S,T,N) 4. Power line assemble condition abnormal 5. Inverter PCB assembly damage (input current sensing part)</td>
</tr>
</tbody>
</table>

### Error Diagnosis and Countermeasure Flow Chart

1. Check Pipe clogging/distortion  
2. Check Covering (Indoor/Outdoor Unit)  
3. Check EEV connector assemble condition/normal operation  
4. Check refrigerant pressure  
→ Reassemble or manage if abnormality found

Is installation condition normal?  
...

Check  
R~S/~S~T/T~R phase voltage is 380V ± 10%  
R~N/~S~N~T~N phase voltage is 220V ± 10%  
→ Check connection condition and wiring if power is abnormal

Is AC input Wire connection condition normal?  
...

Check  
R,S,T,N connection condition  
2. Check wire disconnection and wiring  
→ Reassemble if abnormality found

Is compressor Wire connection condition normal?  
...

Check  
1. Check inverter PCB assembly U,V,W connector connection condition  
2. Check wire disconnection and wiring  
3. Check compressor terminal connection condition (bad contact)  
→ Reassemble if abnormality found

Is inverter PCB assembly normal?  
...

Check inverter PCB assembly IPM normality  
→ Replace inverter PCB assembly

Recheck power and installation condition

---

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Measuring input voltage

Noise filter wiring

Compressor Wire Connection

Inverter PCB assembly/Wiring power to inverter PCB on Noise filter

Noise filter input (upper part)

Noise filter output (lower part)

Inverter PCB assembly power connection

Noise filter power connection
### Error No. Error Type Error Point Main Reasons

<table>
<thead>
<tr>
<th>Error No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>75* Master 751</td>
</tr>
<tr>
<td>Slave1 752</td>
</tr>
<tr>
<td>Slave2 753</td>
</tr>
<tr>
<td>Slave3 754</td>
</tr>
<tr>
<td>Fan CT sensor error Offset of micom which senses the fan motor phase current is not 2.5V</td>
</tr>
</tbody>
</table>

- 1. Input voltage is abnormal(not 15V)
- 2. Fan PCB assembly defect
- 3. Power wire open and connecting fault
- 4. Inv PCB assembly defect

#### Error Diagnosis and Countermeasure Flow Chart

- **Is input voltage normal?**
  - Yes
  - No → 1. Check 15V input power wiring conditions → Rewire them if abnormality found.

- **Is Fan PCB normal?**
  - Yes
  - No → 1. Replace Fan PCB

- **Is there any error when power reset?**
  - Yes
  - No → 1. Replace Fan PCB

- **Recheck power and installation condition**

**15V input power wiring conditions**

**15V input power on Inverter PCB**

**Check short of power wire**
## Error Diagnosis and Countermeasure Flow Chart

1. **Are there any power wire connections normal?**
   - No
   - Yes

2. **Is input voltage normal?**
   - No
   - Yes

3. **Is DC Link power normal?**
   - No
   - Yes

4. **Is Fan PCB normal?**
   - No
   - Yes

**DC Link Voltage Connecting Part**

**Noise filter wiring**

- **Noise filter output (lower part)**
- **Noise filter input (upper part)**

### Error No. | Error Type | Error Point | Main Reasons
---|---|---|---
76* Master 761 Slave1 762 Slave2 763 Slave3 764 | Fan DC Link High Voltage Error | Fan PCB DC link voltage supplied over 780V | 1. Input power abnormal 2. Fan PCB assembly defect 3. Power wire connecting fault
### Troubleshooting Guide

<table>
<thead>
<tr>
<th>Error No.</th>
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<th>Main Reasons</th>
</tr>
</thead>
</table>

#### Error Diagnosis and Countermeasure Flow Chart

1. **Is installation condition normal?**
   - Yes → **Check ODU fan motor assemble condition and locking**
     → Reassemble or replace if abnormality found
   - No
2. **Are the resistance between each phase and insulation resistance of motor output terminal normal?**
   - Yes
   - No
      1. **Check resistance between each motor output terminal**
         - LG motor : $8.8\Omega \pm 10\% (25^\circ C)$
         - Panasonic : $8.8\Omega \pm 10\% (25^\circ C)$
      2. **Check insulation resistance between ODU fan motor terminal(U,V,W) and pipe**
         (over 100M)
         → Replace fan motor if abnormality found
3. **Is motor wire connection condition normal?**
   - Yes
   - No
      1. **Check if color of motor output terminal(U,V,W) connector matched with PCB’s**
      2. **Check wire disconnection and wiring**
         → Reassemble or replace if abnormality found
4. **Is Fan PCB assembly normal?**
   - Yes → **Recheck power and installation condition**
   - No
      1. **Check Fan PCB assembly IPM normal**
      → Replace Fan PCB assembly

---

**Measuring fan motor phase resistance**

**Fan motor wire connection**
## Error Diagnosis and Countermeasure Flow Chart

| Is fan motor assembly condition normal? | No | Check ODU fan motor assembly condition and locking → Reassemble or replace if abnormality found |
| Are the resistance between each phase and insulation resistance of motor output terminal normal? | No | 1. Check resistance between each motor output terminal  
   LG motor: 8.8Ω±10%(25°C) Panasonic: 8.8Ω±10%(25°C)  
   2. Check insulation resistance between ODU fan motor terminal(U,V,W) and pipe (over 100M)  
   → Replace fan motor if abnormality found |
| Is fan motor connection condition normal? | No | 1. Check if color of motor output terminal(U,V,W) connector matched with PCB's  
   2. Check wire disconnection and wiring  
   → Reassemble or replace if abnormality found |
| Is fan PCB assembly normal? | No | Check fan PCB assembly IPM normal → Replace Fan PCB assembly |
| | Yes | Recheck power and installation condition |

### Measuring fan motor phase resistance
![Fan motor phase resistance](image1)

### Measuring insulation resistance between fan terminal & chassis
![Insulation resistance](image2)

### Fan motor wire connection
![Fan motor wire](image3)
## Error Diagnosis and Countermeasure Flow Chart

- **Is EEPROM assemble condition normal?**
  - No: Reset after checking EEPROM assemble condition
  - Yes: Correct check sum
    - No: Replace Correct EEPROM
    - Yes: Recheck power and installation condition

### EEPROM insertion direction

- **SVC PCB**
- **EEPROM**
- Same direction both socket hole and EEPROM hole

*Note: Replace after power off*
### Error Diagnosis and Countermeasure Flow Chart

**Is EEPROM insertion normal?**
- Yes → Recheck power and installation condition
- No → 1. Check EEPROM insertion direction/connection condition
  2. Check EEPROM checksum → Replace EEPROM if abnormality found

**Is Fan PCB assembly normal?**
- Yes → Replace Fan PCB assembly
- No → Recheck power and installation condition

---

**Fan EEPROM insertion**

**Inverter EEPROM insertion direction**

Note: Replace after power off
<table>
<thead>
<tr>
<th>Error No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>104*</td>
<td>Communication Error Between Outdoors</td>
<td>Master displays ODU number which is not communicated. Slave displays own error number</td>
<td>1. Loose connection of power cable/ communication cable (Open/Short) 2. Defect of each outdoor unit PCB</td>
</tr>
</tbody>
</table>

### Error Diagnosis and Countermeasure Flow Chart

1. **Is communication cable installed normally?**
   - Yes
   - No
     - Connect communication cable

2. **Is Slave Unit Dip SW setting done?**
   - Yes
   - No
     - Dip SW setting

3. **Is main PCB power supplied?**
   - Yes
   - No
     - Connect power cable
   - Yes
     - Replace main PCB

* **Slave Unit Dip SW**

- **Slave1**
- **Slave2**
- **Slave3**
<table>
<thead>
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<tbody>
<tr>
<td>105* Master 11 → 051 Slave1 12 → 052 Slave2 13 → 053 Slave3 14 → 054</td>
<td>Communication error (Fan PCB ↔ Inverter PCB)</td>
<td>Fan controller didn’t receive signal from inverter controller</td>
<td>1. Wrong connection between Inverter and Fan PCB 2. Fan PCB power not supplied 3. ODU Inv/Fan PCB defect</td>
</tr>
</tbody>
</table>

## Error Diagnosis and Countermeasure Flow Chart

1. Check DC 15V power cable between Inverter PCB and fan PCB
2. Check communication cable between Inverter PCB and fan PCB
   → Reconnect or replace wire if abnormality found

---

### Checking 15V input

#### Fan communication connection

#### Fan Error LED

*Note: Check fan PCB assembly Error LED blinking (Check 108π Error)*
## Error Diagnosis and Countermeasure Flow Chart

<table>
<thead>
<tr>
<th>Error No.</th>
<th>Error Type</th>
<th>Error Point</th>
<th>Main Reasons</th>
</tr>
</thead>
</table>
| 106* Master 11 → 061 Slave1 12 → 062 Slave2 13 → 063 Slave3 14 → 064 | ODU Fan PCB IPM Fault | IPM protection circuit activation (over current / overheating) | 1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge  
2. ODU fan motor assemble condition abnormal (Coil disconnection/Short/Insulation damage)  
3. Fan PCB heatsink assemble condition abnormal  
4. Fan PCB assembly defect |

### Error Diagnosis and Countermeasure Flow Chart

1. **Is fan motor assemble condition normal?**
   - Yes
   - No
     - **Check ODU fan motor assemble condition and locking**
       - → Reassemble or replace if abnormality found

2. **Is fan motor wire connection condition normal?**
   - Yes
   - No
     - 1. Check fan motor U,V,W connector connection condition
       - → Reassemble wire if abnormality found
     - 2. Check fan motor wire disconnection
       - → Replace ODU fan motor if abnormality found

3. **Is fan PCB assemble condition normal?**
   - Yes
   - No
     - 1. Check fan PCB connector condition
       - → Reassemble if abnormality found
     - 2. Check assemble condition between fan PCB and Heatsink
       - → Reassemble heatsink if abnormality found

4. **Is Fan Heat sink temperature sensor normal?**
   - Yes
   - No
     - 1. Check short of Heat sink temperature sensor
       - (Resistance : 10kΩ ± 5% at 25°C)
     - 2. Replace sensor when abnormality found.

5. **Is fan PCB assembly normal?**
   - Yes
   - No
     - **Replace fan PCB assembly**

---

### Fan Motor Wire connection

![Fan Motor Wire connection](image)

### Fan IPM assembly position

![Fan IPM assembly position](image)

### Fan Heatsink assemble position

![Fan Heatsink assemble position](image)
### Error Diagnosis and Countermeasure Flow Chart

1. **Is wiring between fan motor and PCB normal?**
   - Yes → Recheck power and installation condition
   - No → Measure DC_Link voltage
     - If normal, check inverter PCB if voltage is below 380V
     - If not, replace fan PCB assembly

2. **Is DC_Link voltage normal?**
   - Yes → 1. Check DC_Link Wire connection
     - 2. DC_Link → Replace wire if abnormality found
   - No → Replace fan PCB assembly

**Error Type & Error Point**

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<tr>
<th>Error No.</th>
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<tbody>
<tr>
<td>107* Master 11 → 071 Slave1 12 → 072 Slave2 13 → 073 Slave3 14 → 074</td>
<td>Fan DC Link Low Voltage Error</td>
<td>Fan PCB DC link voltage supplied below 380V</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Wrong wiring between inverter PCB and Fan PCB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Fan PCB assembly defect</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Reactor terminal contact defect</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. DC link terminal wiring/contact defect</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. Bridge diode defect</td>
</tr>
</tbody>
</table>
### Error diagnosis and countermeasure flow chart

1. **Is temperature sensor connector connections are normal?**
   - Yes → **Check and correct connection**
   - No → **Is the value of temperature sensor resistance normal?**

2. **Is the value of temperature sensor resistance normal?**
   - Yes → **Replace outdoor unit PCB**
   - No → **Replace sensor**

* Sensor resistance 100 kΩ over (open) or 100 Ω below (short) will generate error

Note: Temperature sensor resistance vary with temperature, So compare temperature sensor resistance value according to outdoor unit temperature by referring below table (±5% tolerance)

- **Air temperature sensor:** 10°C = 20.7kΩ : 25°C = 10kΩ : 50°C = 3.4kΩ
- **Pipe temperature sensor:** 10°C = 10kΩ : 25°C = 5kΩ : 50°C = 1.8kΩ
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<tr>
<td>151* Master 11→511</td>
<td>Function error of outdoor 4way (reversing valve)</td>
<td>Function error of 4way (reversing valve) in Main or Slave outdoor units</td>
<td>1. Wrong operation of 4way valve because of sludge etc. inflow 2. No pressure difference because of compressor fault 3. Wrong installation of In/outdoor common pipe 4. Defect of 4way valve</td>
</tr>
</tbody>
</table>

**Error diagnosis and countermeasure flow chart**

- **Is 4-Way valve connector connection properly connected?**
  - No: Reconnect it
  - Yes:

- **Is 4 Way valve coil resistance normal?**
  - No: Change 4 Way valve coil
  - Yes:

- **Is 4 way valve coil connected to 4 way valve normally?**
  - No: Re-insert 4 way valve coil
  - Yes:

- **In case of more than 2 units, does master outdoor unit recognize as more than 2 units?***
  - No: Refer to CH 51 & make measure
  - Yes:

- **After reset, can we check supply voltage at PCB when starting heating mode operation***
  - No: Replace outdoor unit PCB
  - Yes:

- **Is compressor working normally?**
  - No: Check and replace compressor, Magnet switch, corresponding PCB [refer electric component part]
  - Yes:

- **After opposite mode operation to present mode, is the same error occurred again?**
  - No:
  - Yes: If the same error is occurred in near future replace 4way valve

- **Replace 4 way valve*****
* Measure the resistance of 4way valve

** Confirm the 4way valve coil is inserted to the end

*** When power is supplied in order as follow
(Slave2 → Slave1 → Mater)
ODU information is displayed one after the other at main PCB 7-segment
1. Model ID
   → 5HP:60, 6HP:61, 8HP:62, 10HP:63, 12HP:64, 14HP:65
2. Total Capacity
   → Displayed with HP
3. ODU Type
   → HEAT PUMP: 2, Cooling: 0
4. Normal mode: 25
5. Refrigerant
   → R410a: 41

**** Checking method for outdoor unit of 3unit system
(Master + Slave1 + Slave2)
① Close all the SVC valves of high / low pressure common pipe
② Operate system
③ Check the difference of high and low pressure with LGMV for each unit (Master, Slave1, Slave2)
④ If there is a unit in which the difference is not increased then the 4way valve of that unit is defective

---

Location of 4way valve connector on Main PCB (marked as 4way, CN09)

**** Check the output voltage of terminal socket during heating operation
### Error No. | Error Type | Error Point | Main Reasons
--- | --- | --- | ---
173* Master 11-> 731 Slave1 12-> 732 Slave2 13-> 733 Slave3 14-> 734 | Outdoor Unit Constant Speed Compressor 1 Over Current | Outdoor Unit Constant Speed Compressor 1 Fault or Drive Fault | 1. Constant speed compressor 1 damage 2. Constant speed compressor 1 input over current 3. Discharge temperature sensor defect

174* Master 11-> 741 Slave1 12-> 742 Slave2 13-> 743 Slave3 14-> 744 | Outdoor Unit Constant Speed Compressor 2 Over Current | Outdoor Unit Constant Speed Compressor 2 Fault or Drive Fault | 1. Constant speed compressor 2 damage 2. Constant speed compressor 2 input over current 3. Discharge temperature sensor defect

#### Error diagnosis and countermeasure flow chart

Is resistance value (insulation & phase to phase) of corresponding constant compressor normal? [refer electric component part]
- Yes
- No

No: Replace constant compressor

Is cables connection of compressor normal?
- Yes
- No

No: Adjust connection of cables

Is discharge temperature sensor of compressor normal? [refer electric component part]
- Yes
- No

No: Replace discharge temperature sensor

* cables connection between constant compressor and magnetic switch

Replace outdoor unit PCB
1. Failure Receiving Signal Between Main-Sub Micom of Master Outdoor unit Main PCB

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<tr>
<td>182*</td>
<td>Communication Error Between Main-Sub Micom of Master Outdoor unit Main PCB</td>
<td>Failure Receiving Signal Between Main-Sub Micom of Master Outdoor unit Main PCB</td>
<td>1. Failure Receiving Signal Between Main-Sub Micom of Master Outdoor unit Main PCB</td>
</tr>
</tbody>
</table>

**Sub Micom LED Blinking?**

- **No**: Press the Reset Button
- **Yes**: Clear Error?
  - **No**: Momentary Error
  - **Yes**: Sub Micom

**[Heat Pump]**

**[Cooling Only]**
### Error diagnosis and countermeasure flow chart

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</table>
| 184* Master (11-841) Slave1 (12-842) Slave2 (13-843) Slave3 (14-844) | Oil equalizing pipe temperature sensor error | Oil balance pipe temperature sensor Open or short | 1. Bad connection of air temperature connector  
2. Defect of oil temperature connector (Open/Short)  
3. Defect of outdoor PCB |
| 185* Master (11-851) Slave1 (12-852) Slave2 (13-853) Slave3 (14-854) | Oil equalizing pipe temperature sensor error | Oil balance pipe temperature sensor Open or short | 1. Bad connection of air temperature connector  
2. Defect of oil temperature connector (Open/Short)  
3. Defect of outdoor PCB |
| 186* Master (11-861) Slave1 (12-862) Slave2 (13-863) Slave3 (14-864) | Oil equalizing pipe temperature sensor error | Oil balance pipe temperature sensor Open or short | 1. Bad connection of air temperature connector  
2. Defect of oil temperature connector (Open/Short)  
3. Defect of outdoor PCB |

**Error diagnosis and countermeasure flow chart**

- **Is sensor connected to PCB correctly??**
  - Yes: **Is sensor value correct??**
    - Yes: Replace corresponding outdoor unit PCB  
    - No: Replace sensor
  - No: Connect sensor to PCB correctly

* If value is 100kΩ ↑(open) or 100Ω ↓(short), error occurs

NB: Resistance value of temperature sensor change according to temperature  
It is normal if value shown as below (±5% error)  
Sensor of air temperature: 10°C = 20.7kΩ : 25°C= 10kΩ : 50°C= 3.4kΩ  
Sensor of piping temperature: 10°C = 10kΩ : 25°C= 5kΩ : 50°C= 1.8kΩ
**Troubleshooting Guide**

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<tr>
<td>193*</td>
<td>Fan PCB heatsink temperature high</td>
<td>Heat sink temperature is over 95°C</td>
<td>1. Heatsink temperature sensor defect 2. Fan PCB assembly defect</td>
</tr>
<tr>
<td>194*</td>
<td>Fan PCB heatsink temperature sensor error</td>
<td>Heatsink temperature sensor abnormal</td>
<td>1. Heatsink temperature sensor defect(Open/Short) 2. Wrong connection of temperature sensor connector 3. Fan PCB assembly defect</td>
</tr>
</tbody>
</table>

**Error diagnosis and countermeasure flow chart**

1. **Is temperature sensor inserted to fan PCB?**
   - Yes
   - No
     - Check connection of heat sink temperature connector

2. **Is temperature sensor attached to heat sink?**
   - Yes
   - No
     - Check connection condition of heat sink and temperature sensor

3. **Is temperature sensor normal?**
   - Yes
   - No
     - Check heat sink temperature sensor wire disconnection
     - Measure temperature sensor resistance(10kΩ ±5% at 25°C)
     - Replace the sensor if abnormality found

4. **Is fan PCB assembly normal?**
   - Yes
   - No
     - Replace fan PCB assembly

   Recheck power and installation condition

**Fan heat sink connection**

**Checking temperature sensor disconnection**
Are there any communication wire of RS-485 connections normal?

Are there any overlap of IDU address?

Is Simple central controller setting normal?

Recheck power and installation condition

Error No. Error Type Error Point Main Reasons

242 Network Error Network error of central controller

1. RS-485 communication wiring defect
2. Communication defect between remote controller and indoor unit
3. RS-485 dip switch setting error
4. Indoor unit addressing setting error on central controller

## Error diagnosis and countermeasure flow chart

1. Reconnect RS-485 communication wire

Reset the overlap of IDU address for single address

1. Set the slave mode with Simple central controller after reset.