

**SmartGuard**

# Alarm Reference

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# About This Document

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## Purpose

This document describes how to handle all alarms of the following products:

- SmartGuard-63A-S0
- SmartGuard-63A-AUS0
- SmartGuard-63A-T0
- SmartGuard-63A-AUT0

## Intended Audience

The document is intended for:

- Technical support engineers
- Commissioning engineers
- Maintenance engineers

## Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in earlier issues.

### Issue 02 (2024-10-30)

- Updated [3 4202 On-/Off-Grid Switching Signal Interrupted](#).
- Updated [5 4204 Device Fault](#).
- Updated [6 4205 Update Failure or Version Mismatch](#).
- Updated [7 4206 Overtemperature](#).
- Updated [8 4207 Abnormal Grounding](#).
- Updated [9 4208 Grid Overvoltage](#).
- Updated [10 4209 Bypass Switch Turned On](#).
- Updated [11 4210 Short Circuit of Backed-Up Appliance](#).
- Updated [12 2082 Backup Box abnormal](#).

## **Issue 01 (2023-12-09)**

This issue is the first official release.

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# 1 Description of Alarm Reference Items

| Item           | Description   |
|----------------|---|
| Alarm ID       | Indicates the ID of an alarm. Unique identifier of an alarm in one product.   |
| Alarm Name     | Indicates the name of an alarm. In the same product, alarm names and alarm IDs correspond to each other, which clearly and accurately reflect the meaning of alarms.  |
| Alarm Severity | Alarm severities are defined as follows: <ul style="list-style-type: none"><li>• Major: The SmartGuard shuts down or some of its functions are abnormal due to a fault.</li><li>• Minor: Some components of the SmartGuard are faulty but the system can still operate.</li><li>• Warning: The SmartGuard functions normally, but its output power decreases due to external factors.</li></ul> |
| Possible Cause | Indicates the possible cause of the alarm, including the cause ID and cause description.  |
| Suggestion     | Indicates the procedure for handling the alarm.   |

# 2 4201 Incorrect Wiring

## Alarm Attribute

| Alarm ID | Alarm Name       | Alarm Severity |
|----------|------------------|----------------|
| 4201     | Incorrect Wiring | Major          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | <ol style="list-style-type: none"><li>1. Inverter cables are loose or connected to the wrong ports.</li><li>2. Power backup cables are connected to the wrong ports.</li></ol>   |
| 2        | <ol style="list-style-type: none"><li>1. Mains cables are loose or connected to the wrong ports.</li><li>2. None-power-backup cables are connected to the wrong ports.</li></ol> |

## Suggestion

| Cause ID | Suggestion  |
|----------|---|
| 1        | <ol style="list-style-type: none"><li>1. Power off the SmartGuard. After 5 minutes, check whether the cable connection to the inverter or backed-up appliances is normal. If not, rectify the fault.</li><li>2. You are advised to check all other cables of the SmartGuard. If any cable connection is abnormal, correct it.</li><li>3. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.</li></ol> |

| Cause ID | Suggestion   |
|----------|--|
| 2        | <ol style="list-style-type: none"><li>1. Power off the SmartGuard. After 5 minutes, check whether the cable connection to the grid or non-backed-up appliances is normal. If not, rectify the fault.</li><li>2. You are advised to check all other cables of the SmartGuard. If any cable connection is abnormal, correct it.</li><li>3. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.</li></ol> |



# 3 4202 On-/Off-Grid Switching Signal Interrupted

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## Alarm Attribute

| Alarm ID | Alarm Name                                | Alarm Severity |
|----------|---|----------------|
| 4202     | On-/Off-Grid Switching Signal Interrupted | Major          |

## Possible Cause

| Cause ID | Possible Cause  |
|----------|---|
| 1        | <ol style="list-style-type: none"><li>1. The on-/off-grid switching signal cables are loose, connected incorrectly or in wrong polarity.</li><li>2. The signal sending circuit of the BackupBox or the signal receiving circuit of the inverter failed.</li></ol> |

## Suggestion

1. Check the DO cable between the BackupBox and inverter. If the cable is loose or disconnected, securely connect it.
2. If the alarm is not automatically cleared after the cable connection fault is rectified, you need to manually clear the alarm on the app.

# 4 4203 Incorrect Connection of Live and Neutral Wires

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## Alarm Attribute

| Alarm ID | Alarm Name                                     | Alarm Severity |
|----------|--|----------------|
| 4203     | Incorrect Connection of Live and Neutral Wires | Warning        |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | The live and neutral wires of mains power are incorrectly connected. |

## Suggestion

1. Power off the SmartGuard. After 5 minutes, check and correct the live and neutral wire connection.
2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.

# 5 4204 Device Fault

## Alarm Attribute

| Alarm ID | Alarm Name   | Alarm Severity |
|----------|--------------|----------------|
| 4204     | Device Fault | Major          |

## Possible Cause

| Cause ID | Possible Cause  |
|----------|---|
| 1~4      | A major fault has occurred on the internal circuit of the device.   |
| 5        | 1. The N-PE relay is short-circuited.<br>2. The neutral wire of the power grid is short-circuited to the neutral wire of the backup load. |
| 6~10     | A major fault has occurred on the internal circuit of the device.   |
| 11       | 1. A major fault has occurred on the internal circuit of the device.<br>2. The primary controller failed.                                 |
| 12~13    | A major fault has occurred on the internal circuit of the device.   |
| 14       | The grid voltage sampling circuit or inverter voltage sampling circuit is severely faulty.  |
| 15       | The overcurrent detection circuit used to determine whether the backed-up load is short-circuited is faulty.                              |
| 16       | The auxiliary power supply on the inverter side is faulty.  |
| 17       | The relay on the inverter side is open-circuited or short-circuited.  |

| Cause ID | Possible Cause  |
|----------|---|
| 19       | The relay on the grid side is open-circuited.                     |
| 20       | The relay on the power grid side is short-circuited.              |
| 21~28    | A major fault has occurred on the internal circuit of the device. |

## Suggestion

| Cause ID | Suggestion   |
|----------|--|
| 1~4      | <ol style="list-style-type: none"> <li>1. Power off the SmartGuard and wait for 5 minutes.</li> <li>2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, turn on the bypass switch to supply power to appliances and contact your vendor or technical support.</li> </ol>   |
| 5        | <ol style="list-style-type: none"> <li>1. Power off the SmartGuard and wait for 5 minutes.</li> <li>2. Check whether the neutral wire of the power grid is short-circuited to the neutral wire of the backup load outside the SmartGuard.</li> <li>3. Power on the SmartGuard. If the fault persists 5 minutes after the device restarts, contact your vendor or technical support.</li> </ol> |
| 6~13     | <ol style="list-style-type: none"> <li>1. Power off the SmartGuard and wait for 5 minutes.</li> <li>2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, turn on the bypass switch to supply power to appliances and contact your vendor or technical support.</li> </ol>   |
| 14~17    | <ol style="list-style-type: none"> <li>1. Power off the SmartGuard and wait for 5 minutes.</li> <li>2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.</li> </ol>   |
| 19~28    | <ol style="list-style-type: none"> <li>1. Power off the SmartGuard and wait for 5 minutes.</li> <li>2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, turn on the bypass switch to supply power to appliances and contact your vendor or technical support.</li> </ol>   |

# 6 4205 Update Failure or Version Mismatch

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## Alarm Attribute

| Alarm ID | Alarm Name                         | Alarm Severity |
|----------|------------------------------------|----------------|
| 4205     | Update Failure or Version Mismatch | Minor          |

## Possible Cause

| Cause ID | Possible Cause     |
|----------|--------------------|
| 1~3      | The update failed. |

## Suggestion

1. Perform the update again.
2. If the update fails multiple times, you are advised to turn on the bypass switch to supply power to appliances and contact your vendor or technical support.

# 7 4206 Overtemperature

## Alarm Attribute

| Alarm ID | Alarm Name      | Alarm Severity |
|----------|-----------------|----------------|
| 4206     | Overtemperature | Minor          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | <ol style="list-style-type: none"><li>1. The device is covered by foreign objects.</li><li>2. The ambient temperature is high.</li><li>3. The load is excessive.</li><li>4. An exception occurred on the internal circuit of the device.</li></ol>                       |
| 2        | <ol style="list-style-type: none"><li>1. The device is covered by foreign objects.</li><li>2. The ambient temperature is high.</li><li>3. The insulation of the appliance is abnormal.</li><li>4. An exception occurred on the internal circuit of the device.</li></ol> |
| 3        | <ol style="list-style-type: none"><li>1. The device is covered by foreign objects.</li><li>2. The ambient temperature is high.</li><li>3. The load is excessive.</li><li>4. An exception occurred on the internal circuit of the device.</li></ol>                       |

| Cause ID | Possible Cause  |
|----------|---|
| 4~8      | <ol style="list-style-type: none"> <li>1. The device is covered by foreign objects.</li> <li>2. The ambient temperature is high.</li> <li>3. The device is exposed to direct sunlight.</li> <li>4. The load is excessive.</li> <li>5. An exception occurred on the internal circuit of the device.</li> </ol> |
| 9        | <ol style="list-style-type: none"> <li>1. The internal cable is not securely connected to the internal terminal for connecting backed-up loads.</li> <li>2. An exception occurred on the internal circuit of the device.</li> </ol>   |
| 10       | <ol style="list-style-type: none"> <li>1. The internal cable is not securely connected to the internal terminal for connecting non-backed-up loads.</li> <li>2. An exception occurred on the internal circuit of the device.</li> </ol>   |
| 11       | <ol style="list-style-type: none"> <li>1. The internal cable is not securely connected to the internal terminal for connecting the inverter.</li> <li>2. An exception occurred on the internal circuit of the device.</li> </ol>  |

## Suggestion

| Cause ID | Suggestion  |
|----------|---|
| 1        | <ol style="list-style-type: none"> <li>1. Check whether the device is covered by foreign objects. If yes, remove the foreign objects.</li> <li>2. Check whether the ambient temperature exceeds the allowed range. If yes, lower the ambient temperature.</li> <li>3. You are advised to shut down some high-power appliances.</li> <li>4. If the fault persists, contact your vendor or technical support.</li> </ol>        |
| 2        | <ol style="list-style-type: none"> <li>1. Check whether the device is covered by foreign objects. If yes, remove the foreign objects.</li> <li>2. Check whether the ambient temperature exceeds the allowed range. If yes, lower the ambient temperature.</li> <li>3. Check for appliances with abnormal insulation and cut them off.</li> <li>4. If the fault persists, contact your vendor or technical support.</li> </ol> |

| Cause ID | Suggestion   |
|----------|--|
| 3        | <ol style="list-style-type: none"> <li>1. Check whether the device is covered by foreign objects. If yes, remove the foreign objects.</li> <li>2. Check whether the ambient temperature exceeds the allowed range. If yes, lower the ambient temperature.</li> <li>3. You are advised to shut down some high-power appliances.</li> <li>4. If the fault persists, contact your vendor or technical support.</li> </ol>   |
| 4~8      | <ol style="list-style-type: none"> <li>1. Check whether the device is covered by foreign objects. If yes, remove the foreign objects.</li> <li>2. Check whether the ambient temperature exceeds the allowed range of the ambient temperature derating curve. If yes, adjust the ambient temperature.</li> <li>3. Check whether the device is exposed to direct sunlight. If yes, install an awning or change the installation position.</li> <li>4. Shut down some high-power loads.</li> <li>5. If the fault persists, contact your vendor or technical support.</li> </ol> |
| 9        | <ol style="list-style-type: none"> <li>1. Check whether the internal cable to the internal terminal for connecting backed-up loads is loose or broken. If yes, rectify the fault.</li> <li>2. If the fault persists, contact your vendor or technical support.</li> </ol>  |
| 10       | <ol style="list-style-type: none"> <li>1. Check whether the internal cable to the internal terminal for connecting non-backed-up loads is loose or broken. If yes, rectify the fault.</li> <li>2. If the fault persists, contact your vendor or technical support.</li> </ol>  |
| 11       | <ol style="list-style-type: none"> <li>1. Check whether the internal cable to the internal terminal for connecting the inverter is loose or broken. If yes, rectify the fault.</li> <li>2. If the fault persists, contact your vendor or technical support.</li> </ol>   |



# 8 4207 Abnormal Grounding

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## Alarm Attribute

| Alarm ID | Alarm Name         | Alarm Severity |
|----------|--------------------|----------------|
| 4207     | Abnormal Grounding | Warning        |

## Possible Cause

| Cause ID | Possible Cause  |
|----------|---|
| 1        | <ol style="list-style-type: none"><li>1. The neutral wire or PE cable of the device is not connected.</li><li>2. The output mode set for the inverter does not match the actual cable connection of the power grid.</li></ol> |
| 2        | <ol style="list-style-type: none"><li>1. The ground cable of the neutral wire is not securely connected.</li><li>2. An exception occurred on the internal circuit of the device.</li></ol>                                    |
| 3        | The ground cable of the generator neutral wire is not securely connected.   |

## Suggestion

| Cause ID | Suggestion   |
|----------|--|
| 1        | <ol style="list-style-type: none"><li>1. Power off the SmartGuard. After 5 minutes, check whether the ground cable to the enclosure is loose or broken. If yes, rectify the fault.</li><li>2. After powering on the device, check whether the output mode set for the inverter matches the actual cable connection of the power grid.</li><li>3. Power on the SmartGuard. If the fault persists 5 minutes after the device restarts but the SmartGuard works properly, contact your vendor or technical support.</li></ol>                       |
| 2        | <ol style="list-style-type: none"><li>1. Power off the SmartGuard. After 5 minutes, check whether the neutral wire is loose or broken. If yes, rectify the fault.</li><li>2. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.</li></ol>  |
| 3        | <ol style="list-style-type: none"><li>1. Power off the SmartGuard and stop the generator. After 5 minutes, check whether the ground cable of the generator neutral wire is loose or broken. If yes, rectify the fault.</li><li>2. Measure the impedance between the generator neutral wire and the ground bar with a multimeter. If the impedance is greater than 0.3 ohms, rectify the fault.</li><li>3. Power on the SmartGuard. If the fault persists 5 minutes after the device restart, contact your vendor or technical support.</li></ol> |

# 9 4208 Grid Overvoltage

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## Alarm Attribute

| Alarm ID | Alarm Name       | Alarm Severity |
|----------|------------------|----------------|
| 4208     | Grid Overvoltage | Major          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | The grid voltage is higher than the withstand voltage of the device. |

## Suggestion

1. Check whether the line voltage of the three-phase power grid is mistakenly connected to the system. If yes, connect the phase voltage to the system.
2. If the alarm occurs occasionally, the power grid may be abnormal temporarily. The device automatically recovers after detecting that the power grid becomes normal.
3. Check whether the peak voltage of the power grid is too high. If the fault occurs frequently and persists for a long time, contact the local power operator.

# 10 4209 Bypass Switch Turned On

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## Alarm Attribute

| Alarm ID | Alarm Name              | Alarm Severity |
|----------|-------------------------|----------------|
| 4209     | Bypass Switch Turned On | Major          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | <ol style="list-style-type: none"><li>1. The bypass switch is in the ON position.</li><li>2. The bypass switch is short-circuited on both sides due to abnormal cable connections.</li></ol> |

## Suggestion

1. Power off the SmartGuard and turn off the bypass switch. After 5 minutes, check whether the system cable connection is normal. If not, rectify the fault.
2. Power on the SmartGuard. If the fault persists and no power is supplied to appliances 5 minutes after the device restart, turn on the bypass switch to supply power to appliances and contact your vendor or technical support.

# 11 4210 Short Circuit of Backed-Up Appliance

## Alarm Attribute

| Alarm ID | Alarm Name                           | Alarm Severity |
|----------|--------------------------------------|----------------|
| 4210     | Short Circuit of Backed-Up Appliance | Major          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | 1. A backed-up appliance or its cable is short-circuited.<br>2. The inverter cable is short-circuited. |

## Suggestion

1. Power off the SmartGuard. After 5 minutes, check whether the cable connection to the inverter or backed-up appliances is normal. If not, rectify the fault.
2. Measure the impedance between the input cables of each backed-up appliance with a multimeter. If the impedance is less than 0.3 ohms, disconnect or repair the appliance.
3. Disconnect all backed-up appliances and power on the SmartGuard. After the device restarts and runs for 5 minutes, connect the appliances one by one. If a short circuit alarm is triggered when an appliance is connected, the appliance is short-circuited. In this case, disconnect or repair it.
4. If the fault persists, contact your vendor or technical support.

# 12 2082 Backup Box abnormal

## Alarm Attribute

| Alarm ID | Alarm Name                             | Alarm Severity |
|----------|--|----------------|
| 2082     | Grid-tied/Off-grid Controller Abnormal | Major          |

## Possible Cause

| Cause ID | Possible Cause   |
|----------|--|
| 1        | The device cannot communicate with the Backup Box.   |
| 2        | An unrecoverable fault occurred on an internal circuit of the Backup Box, or the external cable connection of the device is incorrect. |

## Suggestion

| Cause ID | Suggestion   |
|----------|--|
| 1        | <ol style="list-style-type: none"><li>1. Send a shutdown command, and turn off the AC switch, DC switch, and battery switch.</li><li>2. Check whether the power cable and communications (RS485) cable between the Backup Box and the device are properly connected.</li><li>3. Wait for 5 minutes and turn on the battery switch, AC switch, and DC switch.</li><li>4. If the alarm persists, contact your dealer or technical support.</li></ol> |

| Cause ID | Suggestion  |
|----------|---|
| 2        | <ol style="list-style-type: none"><li>1. Send a shutdown command, and turn off the AC switch, DC switch, and battery switch.</li><li>2. Check whether the power and signal cables of the Backup Box are normal.</li><li>3. Wait for 5 minutes and turn on the battery switch, AC switch, and DC switch.</li><li>4. If the alarm persists, contact your vendor or technical support.</li></ol> |