

## **Limited Warranty for Hybrid inverter of LG Energy Solution**

This limited warranty (hereinafter ‘**Warranty**’) specified below applies to LG Energy Solution Hybrid inverter and the Accessory Component (hereinafter ‘**Products**’) supplied by LG Energy Solution, Ltd. (hereinafter ‘**LG Energy Solution**’), purchased by End-users (hereinafter “**Buyer**”) through an authorized RESU sales channel\* (hereinafter ‘**Reseller**’) and installed by ‘**Certified Installer**’. ‘**Certified Installer**’ must hold LG Energy Solution certificate for RESU products.

The following ‘**Warranty**’ is provided for the ‘**Products**’ below.

Product Model
LGES-5048
LGES-5048-NS

\* Hybrid inverter is sold together with, RESU6.5, RESU10, RESU12 and RESU13 Lithium-ion battery.

### **1. Purpose**

The primary purpose of this ‘**Warranty**’ is to clearly define the matters related to the warranty policy of the ‘**Products**’.

### **2. Obligations**

2.1 ‘**Buyer**’ shall use and maintain the ‘**Products**’ in accordance with documentation including the Attachment 1 (Technical Specifications) provided by LG Energy Solution.

2.2 ‘**Buyer**’ shall comply with all precautions specified in documentation provided by LG Energy Solution.

2.3 In order to maintain minimum charging state of the battery, the ‘**Products**’ must be connected to the Grid. When the ‘**Products**’ are installed where Grid is not connected, the ‘**Warranty**’ will be voided.

2.4 The ‘**Products**’ requires to be installed with only LG Energy Solution’s approved and compatible battery model\*. When the ‘**Products**’ are installed with a LG Energy Solution’s non-approved battery model or other maker’s battery model, the ‘**Warranty**’ provided by LG Energy Solution will be voided.

For a list of compatible battery models, ‘**Reseller**’ or ‘**Buyer**’ can visit the Battery Website of LG Energy Solution by the URL below and check the ‘**Home Battery**’ > ‘**Product Info**’ menu.

<https://www.lgessbattery.com/au> (Australia)

\* LG Energy Solution’s compatible battery model: RESU6.5, RESU10, RESU12, RESU13

2.5 Any person performing installation and maintenance of the ‘**Products**’ must have the appropriate electrical qualifications and licenses for battery installations required by the country and the state. In addition they must be a LG Energy Solution ‘**Certified Installer**.’

### 3. Product Warranty

3.1 LG Energy Solution will replace or repair any defect in the ‘Products’ subject to the terms of this ‘Warranty’ including the exclusions set out in Articles 6, 7 and 8, provided that the battery systems are operated under the conditions set forth in Attachment 1 (‘Technical Specifications’)

The Product Warranty shall begin either (i) on the date of the installation or (ii) six (6) months from the date of manufacture, whichever occurs first, and such ‘Warranty’ shall be valid for a period as below table.

Products	Items	Warranty Period
Hybrid Inverter	LGES-5048, LGES-5048-NS inverter	Ten(10) years
Accessory Component	Antenna, WIFI Kit, CT	Two(2) years

3.2 In the event of the ‘Warranty’ exclusion described in Article 7, the Performance Warranty shall be expired.

### 4. Warranty Claim

4.1 The ‘Buyer’ shall notify or contact, within 1 month, their ‘Reseller’ or LG Energy Solution if the purchased or installed ‘Products’ are found to be defective, damaged and/or when the quality-related problems occur by using the Contact point in Article 9.

4.2 If the ‘Buyer’ intends to raise a claim due to the quality defect of the ‘Products’ pursuant to Articles 3 or 4 , the ‘Buyer’ shall provide LG Energy Solution with the following information.

- (1) Dated proof of purchase from authorized RESU sales channel

For authorized RESU sales channel information, ‘Reseller’ or ‘Buyer’ can visit the Battery Website of LG Energy Solution by the URL below and check the ‘Home Battery’ > ‘Where to Buy’.

<https://www.lgessbattery.com/au> (Australia)

- (2) Description of defects, symptoms and when it occurred
- (3) Products serial number
- (4) Further information requested by LG Energy Solution to determine the defect and its cause (for example, error code, description of defect and other information)

(5) 'Certified Installer' or 'Reseller' name / company name / address

4.3 LG Energy Solution shall identify the defect notified by the 'Buyer', and repair or replace if the defect would be covered by the Product Warranty set out in article 3 in accordance with the terms of this Warranty.

## **5. Replace or Repair**

5.1 When a claim is submitted under the Product Warranty or Performance Warranty, LG Energy Solution shall decide whether to (i) repair, or (ii) replace the defective 'Products' with refurbished parts equal in value.

5.2 The 'Warranty' period for the repaired or replaced part/product shall be the remainder of the warranty period for the original part/product.

5.3 Subject to the requirements of any law, no obligation for LG Energy Solution to indemnify or compensate 'Buyers' for any damages which shall arise out of Product Warranty unless otherwise explicitly specified herein.

5.4 The 'Warranty' for defective products are only valid when they have been repaired or replaced by personnel appointed by LG Energy Solution.

In the event the 'Products' are no longer commercially available, LG Energy Solution, at its option, may complete the replacement with alternative equipment deemed to be equivalent in function and performance, or refund the remaining depreciated value of the purchase price of the 'Products' during the Free Warranty Period as set out in the Compensation Scheme below.

### **- Compensation Scheme (For product warranty of inverter product) -**

- Residual value in [Local Currency] = purchasing price in [Local Currency] / 120 x (120 - Operation time after installation in month)
- No warranty of performance will be provided from the 121st month

## **6. Exclusion for Failure to Connect to the Internet or Failure to Register the Product**

In order to provide the 'Warranty' for the full warranty period as set out in Article 3, LG Energy Solution requires the ability to perform the remote firmware updates. These remote updates may interrupt the operation of the 'Products' for a short period, but LG Energy Solution can provide important firmware updates when the 'Products' are connected to the Internet. When the 'Products' are connected to the Internet, it means that you agree with LG Energy Solution to perform the remote updates, without further notice to you.

When the 'Products' are not connected to the Internet or not registered in the RESU Monitor website (<https://www.lgresuhomemonitor.com>), and LG Energy Solution cannot provide important updates for the 'Products', LG Energy Solution may not be able to honour the full Warranty period. However, LG Energy Solution will provide the 'Warranty' for at least five years notwithstanding lack of

registration and/or internet connection. Please also note that the registration process will request you for accepting of collecting personal information.

## **7. General Exclusions**

This 'Warranty' does not apply to any defects or performance failures comprising or resulting from any of the following.

- When the 'Products' are not installed as specified in the Installation Manual
- When the 'Products' are installed by a person lacking the appropriate electrical qualification and license/certificate for the inverter/Lithium-ion battery installation required by the law, including country and state jurisdictions.
- When the 'Products' are not purchased through authorized sales channel designated by LG Energy Solution.
- When the 'Products' are not installed and/or serviced by the 'Certified Installer' of LG Energy Solution.
- When the 'Products' are not manufactured by LG Energy Solution.
- When the 'Products' are transported, stored, installed, assembled, tightened, or wired out of compliance of the official installation manual and datasheet of the 'Products'.
- When the 'Products' are disassembled or dismantled without prior consent of LG Energy Solution.
- When the 'Products' are damaged by physical or electrical stresses such as, inclusive but not exclusive of, inrush current, lightning, flood, tidal wave, fire, or incidental damage.
- When the defect or performance failure occurs or the scope of the defect expands due to improper repair of the 'Products' carried out by technicians who are not approved by LG Energy Solution and/or instructed by the 'Buyer' without the consent of LG Energy Solution.
- When the defect or performance failure occurs in the 'Products' due to the wilful misconduct or negligence of the 'Buyer' or 'Reseller'.
- When the defect or performance failure occurs due to the misuse, faulty use, or negligent use of the 'Products'.
- When the 'Products' are used for purposes other than the Application in Attachment 1.
- When a claim is raised for the 'Products' after the warranty period specified in Article 3 has expired.
- When the scope of the defect or performance failure has expanded because LG Energy Solution or the 'Reseller' were not notified of the defect or failure in the period specified in Article 4.
- When the defect and/or any expanded scope of the defect are caused by force majeure events, such as war, riot, civil war, natural disasters, etc., that are not wholly or predominantly attributable to the acts or omissions of LG Energy Solution.
- When the 'Products' are externally damaged but its performance and function are not affected.
- When the 'Products' are damaged during the transportation from the 'Reseller' to the 'Buyer'.

- When the 'Buyer' or 'Reseller' violates applicable law, including laws or regulations of the state, country or local government while using the 'Products'.
- When a claim for the 'Products' is not raised as prescribed in Article 4.
- Other defects not attributable to LG Energy Solution and up to the extent general exclusions are permitted under the applicable laws.

## **8. Special Exclusions**

### **8.1 Exclusion of Warranties**

The 'Warranty' will not apply if the 'Buyer' violates any of the following provisions:

- The 'Products' shall not be used in facilities with radiation control, nuclear reactors, and facilities related to nuclear safety or nuclear power uses, as well as facilities that may have direct contact with patients.
- The 'Products' shall not be used to power medical devices or life-support equipment.
- The 'Products' shall not be used or installed in a location where vibrations may occur. For example, aircraft, ship (vessel, boat, yacht), car or train are not allowed.
- The 'Products' shall be used for residential stationary storage applications.

### **8.2 Exclusion of Incidental or Consequential Damages**

- To the maximum extent permitted by applicable law, in no event will 'LG Energy Solution' or any of its representatives be liable to 'Buyer' for any incidental or consequential damages arising out of breach of the warranty whether or not the 'Buyer' has been advised of the possibility of such damages.

### **8.3 Disclaimer of Implied Warranties**

- The warranty set forth herein is in lieu of, and 'Reseller' expressly disclaims all other product warranties of any kind whatsoever whether express, implied, statutory, arising by course of dealing or performance, custom, usage in the trade or otherwise, any warranty of merchantability, or fitness for a particular purpose, and in any event no such implied warranty has applicability beyond the time period covered by this warranty.

## 9. Contact

If the 'Buyer' has any questions or wants to file a claim, the first step is to contact the 'Reseller'. And the 'Reseller' shall contact LG Energy Solution using the following contact information.

LOCATION	TELEPHONE	E-MAIL
AUSTRALIA	+61 1300 178 064	essserviceau@lgensol.com
HQ (KOR)	-	essservice@lgensol.com

## 10. Applicable law

This 'Warranty' gives you specific legal rights, and you may also have other rights which vary from according to jurisdiction. Some States do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some States do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

## 11. Applicable Countries

This warranty is applicable only in the countries listed as below, and 'LG Energy Solution' is not responsible for any claims against this Warranty made in and/or based on the event occurred in any countries other than listed herein.

- Australia

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a repair, replacement, or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

The contractual rights that you may be entitled to under the Warranty for hybrid inverter products are addition to these statutory rights.

**Attachment 1. Technical Specifications**
**Battery Input Data**

Battery Type	Li-Ion RESU6.5, RESU10, RESU12, RESU13
Nominal Battery Voltage	48 V
Max. Charging Voltage	≤ 60 V (Configurable)
Max. Charging Current <sup>1)</sup>	100 A
Max. Discharging Current <sup>1)</sup>	100 A
Battery Capacity	126~504 Ah
Charging Strategy for Li-Ion Battery	Self-adaptation to BMS

**PV String Input Data**

Max. DC Input Power - without battery	6500 W
Max. DC Input Power – with battery	8500 W
Max. DC Input Voltage	580 V
Max. DC Input Voltage for battery charging	500 V
MPPT Voltage Range	120~550 V
Start-up Voltage <sup>2)</sup>	125 V
Min Feed-in Voltage <sup>3)</sup>	150 V
MPPT Voltage Range for Full Load	215~500 V
Nominal DC Input Voltage	360 V
Max. Input Current	11 A
Max. Short Current	13.8 A
PV Over-current Protection	21 A
PV Back-feed Current	0 A
No. of MPP Trackers	2
No. of Strings per MPP Tracker	1
DC Overvoltage Category	II

**Efficiency**

Max. Efficiency	97.6 %
Max. Battery to Load Efficiency	94.0 %
European Efficiency	97.0 %
MPPT Efficiency	99.9%

**AC Output Data (Back-up)**

Max. Output Apparent Power	4600 VA
Peak Output Apparent Power <sup>4)</sup>	6900 VA, 3sec
Max. Output Current	20 A
Nominal Output Voltage	230 V ( $\pm 2\%$ )
Nominal Output Frequency	60 Hz ( $\pm 0.2\%$ )
Back-up Over Current Protection	30 A
Output Inrush Current (Peak / Duration)	55 A, 2 $\mu$ s
Automatic Switch Time	10 ms
Output THDv (@Linear Load)	<3%

1) The actual charge and discharge current also depends on the battery..

2) When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V.

3) If there is no battery connected, inverter starts feeding into grid only if PV voltage > 200V.

4) On condition of battery and PV power being enough.

**AC Output Data (On-grid)**

Nominal Power Output Grid	5000 W
Rated/Max. Apparent Power Output to Utility Grid	5000 VA
Max. Apparent Power from Utility Grid	9200 VA
Nominal Output Voltage (V)	230 single phase
Nominal Output Frequency (Hz)	60
Max. AC Output Current to Grid (A)	24.5
Max. AC Current from Grid (A) <sup>5)</sup>	40 A
AC Back-feed Current	0 A
Max. Output Fault Current (Peak / Duration)	43A, 0.2s
Output Inrush Current (Peak / Duration)	55A, 2 $\mu$ s
Output Inrush Current (Peak / Duration)	60A, 3 $\mu$ s
Output Power Factor	~(Adjustable from 0.8 leading to 0.8 lagging)
Output THDi (@Nominal Output)	<3%
AC Overvoltage Category	III



<b>General Data</b>	
Operating Temperature Range	-25~60°C
Storage Temperature Range	-30~65°C
Relative Humidity	0~95 %
Moisture Location Category	4K4H
External Environment Pollute Degree	Grade 1,2,3
Environment Category	Outdoor & Indoor
Operating Altitude	≤4000 m
Cooling	Natural Convection
Noise	<25 Db
User Interface	LED & APP
Communication with BMS	CAN
Communication with Meter	RS485
Communication with Portal	Wi-Fi 6)
Mounting	Wall Bracket
Protection Degree	IP65
Standby Self-Consumption	<13W
Topology	Non-isolated topology
<b>Protection</b>	
Anti-Islanding Protection	Integrated
PV String Input Reverse Polarity Protection	Integrated
Insulation Resistor Detection	Integrated
Residual Current Monitoring Unit	Integrated
Output Over Current Protection	Integrated
Output Short Protection	Integrated
Output Over Voltage Protection	Integrated

\* The 'Products' shall not be installed in an airtight enclosure or in an area without adequate air flow to support natural air convection cooling methods. The 'Product' shall not be installed in sleeping areas or near flammable materials.

The products must only be installed in accordance with applicable standards.