StorEdge™ Inverter Wiring Guide & On Site Checklist for Europe, APAC, South Africa

This document is a battery wiring guide and contains an on-site checklist with steps for post-installation verification of a StorEdge system for the following batteries:

- LG Chem RESU7H/RESU10H

CAUTION

For proper battery performance, the LG Chem battery should remain connected to the StorEdge Inverter and in charging mode. Extended battery disconnection may result in deep discharge and damage the battery. If the battery must be disconnected, first turn OFF the LG battery auxiliary power supply switch and circuit breaker switch. For complete battery installation and commissioning instructions, see the LG Chem installation guide.

For more details, please refer to the StorEdge Installation Guide supplied with the StorEdge Inverter. For additional assistance contact SolarEdge Support (refer to the Support and Contact Information section on page 8).

Wiring Guide

WARNING!

For LG Chem RESU7H/RESU10H batteries:

Before wiring the system, make sure that the battery is powered off, using both of the following switches:

* Auxiliary power supply switch
* Circuit breaker switch

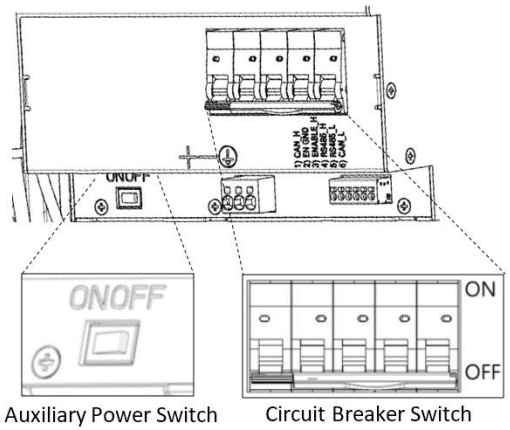


Figure 1: LG Chem Auxiliary Power Switch and Circuit Breaker Switches

Wiring Types and Connectors

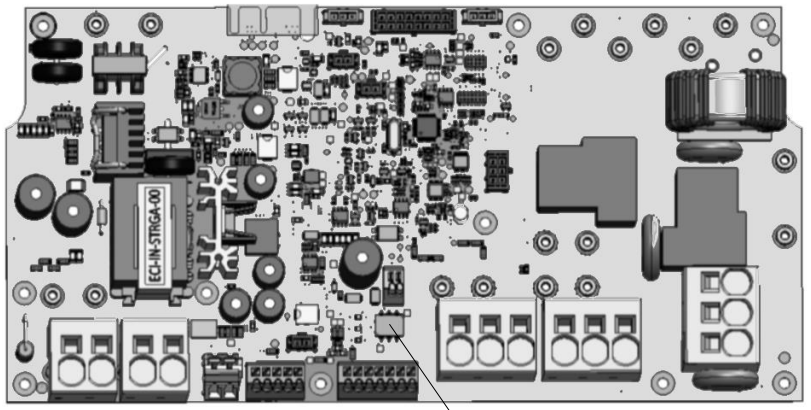
To connect the battery to the StorEdge Inverter, use the following wiring types and connectors:

Recommended Cable Type (min-max cross section)	SolarEdge Connector	LG Chem RESU7H/RESU10H Battery Connector
DC: 6 mm^2 (2.5-6 mm^2), 600V insulated **Ground/PE**: 6-10mm^2, 600V insulated	BAT DC +	DC +
	BAT DC -	DC -
		Ground
Control and monitoring: 5-wire shielded twisted pair cable, 0.2 mm^2 (0.2-1.5 mm^2), 600V insulated. CAT5 600V insulated can also be used.	En (enable)	ENABLE_H
	V+	Not connected
	B- (RS485)	RS485_L
	A+ (RS485)	RS485_H
	G (RS485) or Thermal (depending on inverter type)	EN_G

Wiring Diagrams – Connecting Batteries to the StorEdge Inverter

The diagrams on the following pages illustrate the connection of batteries to the StorEdge system. The following table will help you find the appropriate wiring diagram for your system configuration. Pay attention to whether the battery DIP switch setup on the communication unit main board has 2 or 3 switches.

Battery Type	Connected to	Wiring Diagram
LG Chem RESU7H/RESU10H	StorEdge Inverter with 2 DIP Switches	See Figure 2 on page 3
	StorEdge Inverter with 3 DIP Switches	See Figure 3 on page 3



Connecting the LG Chem RESU7H/RESU10H to a StorEdge Inverter with Two DIP Switches and SolarEdge Meter

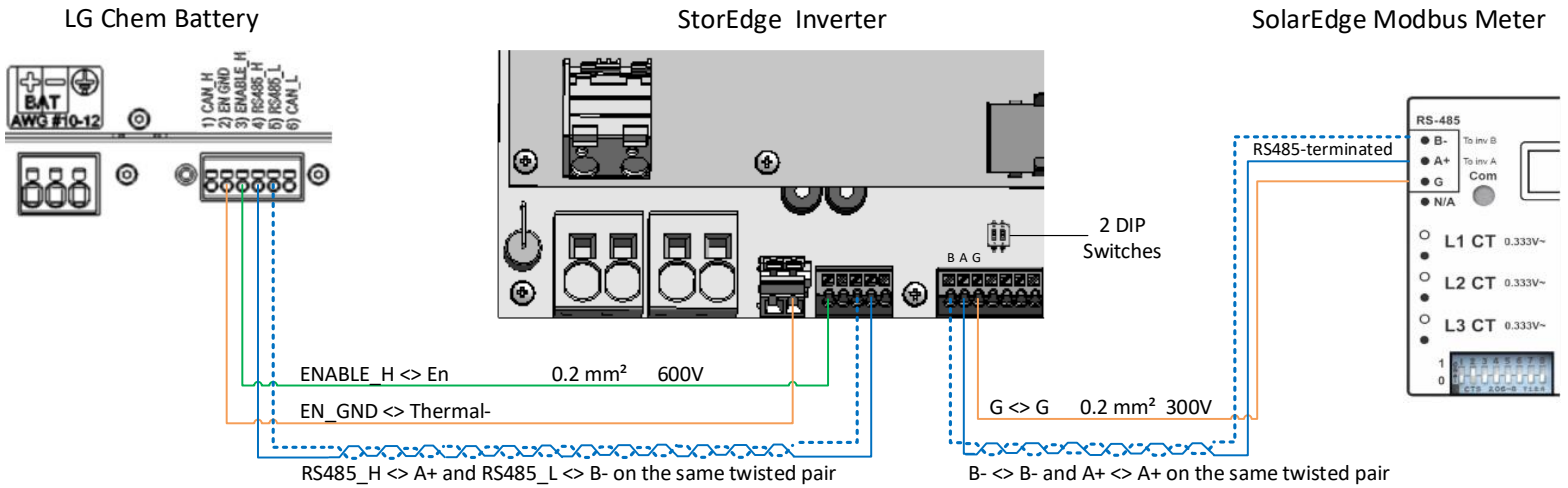


Figure 2: Connecting the LG Chem RESU7H/RESU10H to a StorEdge Inverter with Two DIP Switches and SolarEdge Meter

Connecting the LG Chem RESU7H/RESU10H to a StorEdge Inverter with Three DIP Switches and SolarEdge Meter

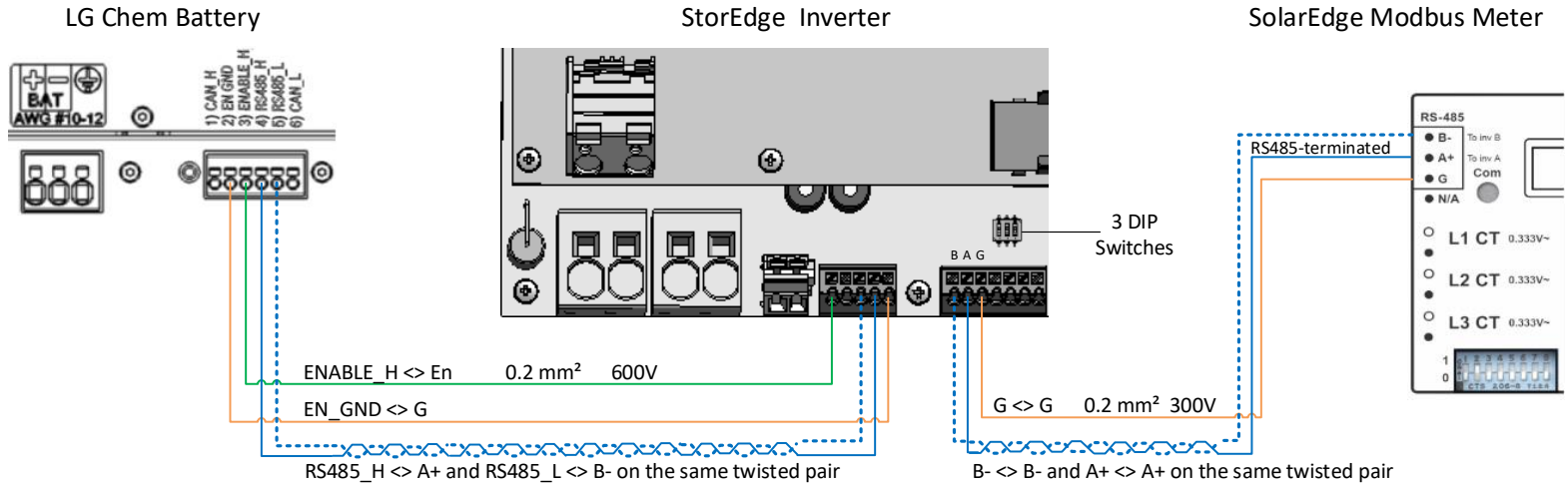
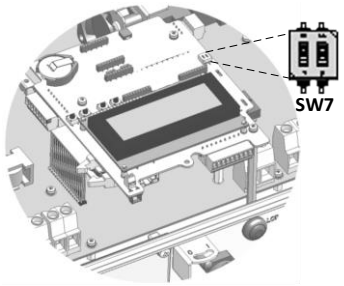


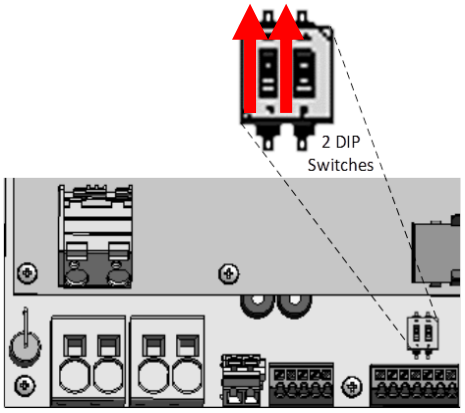
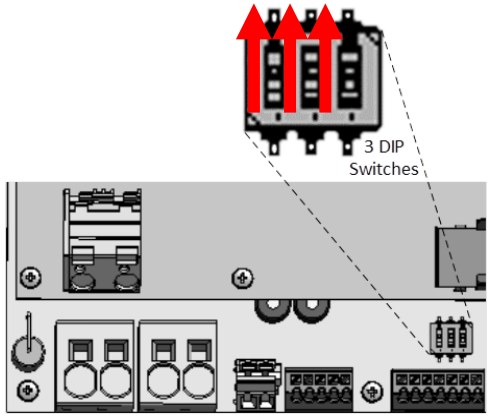
Figure 3: Connecting the LG Chem RESU7H/RESU10H to a StorEdge Inverter with Three DIP Switches and SolarEdge Meter

Switch Settings

Setting the DIP Switches on the Inverter Communication Board

Set DIP switch SW7 	
RS485-1	**RS485-2**
For RS485-1 connections, use DIP Switch 1 (leftmost): * ON (up): Terminated (no meter installed) * OFF (down): Not terminated (meter is installed)	For RS485-2 connections, use DIP Switch 2 (rightmost): * ON (up): Terminated (no meter installed) * OFF (down): Not terminated (meter is installed)

Setting the DIP Switches on the Inverter Connection Unit Main Board (with Two or Three DIP Switches)

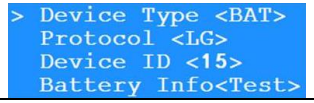
				
DIP Switch 1 (leftmost)	**DIP Switch 2 (rightmost)**	**DIP Switch 1 (leftmost)**	**DIP Switch 2 (center)**	**DIP Switch 3 (rightmost)**
ON (up)	ON (up)	ON (up)	ON (up)	ON (up)

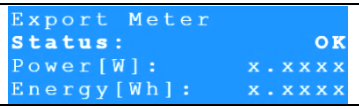
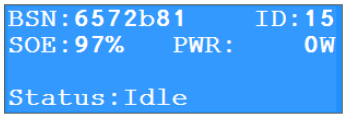
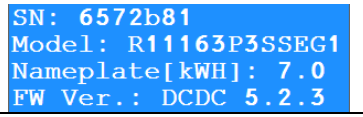
Post Installation Verification and Configuration

Follow the checklist below to verify that the system is properly connected and configured. The checklist is suitable for a backup system with a single StorEdge Inverter, a single battery, and a single SolarEdge Modbus Meter installed at the grid connection point.

For other system configurations, follow the steps in the StorEdge Installation Guide supplied with the StorEdge Inverter.

Step			Verification Action	Checked
1	**Installation and Wiring**			
	1.1		Verify the distance between components complies with the distances detailed in the supplied installation guide.	☐
	1.2		Take a photograph of the battery connection area and send to SolarEdge support (useful for future debugging if necessary).	☐
	1.3		Take a photograph of the connection area of the StorEdge Inverter and send it to SolarEdge support.	☐
	1.4		Take a photograph of the installation and send it to SolarEdge support.	☐
	1.5		Verify that the battery splash cover is closed.	☐
	1.6		Verify that the backed-up loads panel is wired (relevant for backup systems only).	☐
	1.7		Verify that the StorEdge Inverter's DIP switches are configured as shown on page 4.	☐
	1.8		Verify that all DC, communication and AC cabling connections are completed as follows:	
		1.8.1	Check AC wiring and circuit breaker.	☐
		1.8.2	Check string DC input voltage. Expect 1V per optimizer in the string.	☐
		1.8.3	Verify that grounding is properly connected in the battery and inverter.	☐
		1.8.4	Check the DC wiring to the battery, according to the wiring diagram you selected from the table on page 4. Check the connections and verify that all are securely connected.	☐
		1.8.5	Check connections to the battery and the switch setup as described earlier in this document.	☐
		1.8.6	Check connections to the meter. If no meter is connected, the inverter's RS485 bus must be terminated using the DIP switches (see page 4).	☐
		1.8.7	Check that a 9V battery is installed in the StorEdge Inverter.	☐
		1.8.8	Check connection to the Internet with one of the following options: Ethernet, Wi-Fi, Cellular, ZigBee Module. The connection status displayed should be S_OK.	☐

2	**Activation and Firmware Upgrade**			
	2.1	Turn the inverter ON/OFF switch to OFF and make sure it's OFF during the entire upgrade process.		☐
	2.2	LG Chem Battery: Switch both Auxiliary power supply and Circuit breaker switch ON.		☐
	2.3	Turn the AC to the inverter OFF.		☐
	2.4	Verify that the serial number on the activation card supplied with the inverter matches the serial number of the inverter.		☐
	2.5	Insert the activation card to the designated slot located on the inverter communication board.		☐
	2.6	Turn ON the AC to the inverter to start activation.		☐
	2.7	Wait until the LCD indicates that the inverter activation process is completed.		☐
	2.8	Turn the AC to the inverter OFF.		☐
	2.9	Remove the activation card from the inverter.		☐
	2.10	Download the latest firmware version available at: https://www.solaredge.com/storedge/firmware to a microSD card.		☐
	2.11	Insert the microSD card with the upgrade file to the designated slot located on the inverter communication board.		☐
	2.12	Turn the AC to the inverter ON.		☐
	2.13	Wait until the LCD indicates that the file was uploaded to the inverter and the battery.		☐
3	**RS485 Configuration Verification (for one Battery and one Export + Import meter)**			
	3.1	If not already OFF, switch OFF the StorEdge Connection Unit switch (for StorEdge inverter).		☐
	3.2	Switch the inverter ON/OFF switch to OFF.		☐
	3.3	**Devices**		
		3.3.1	Enter Setup mode and select **Communication > RS485-1 Conf > Multi Devices**	☐
	3.4	**Meter**		
		3.4.1	Select **Communication > RS485-1 > Meter 2 > Meter ID: 2, Device Type <MTR>, Protocol <WN>, CT Rating (as per CT label), Device ID <2>, Meter Function (E+I).**	☐
		3.4.2	Verify **Device Type > Revenue Meter**	☐
		3.4.3	Verify **Protocol > Meter**	☐
		3.4.4	Verify that the CT value matches the value that appears on the CT label: **CT Rating > <xxxxA>**.	☐
		3.4.5	If CT resets to 0, check the communication with the meter.	☐
	3.5	**Battery**		
		3.5.1	Select **Communication > RS485-1 > Battery 1 > Protocol (LG Battery).** Select **Communication > RS485-1 > Battery 1 > Battery ID (15).** 	☐
	3.6	**Optional: RS485 Expansion Kit**		
		3.6.1	For a system with multiple inverters that has a single RS485 bus only, install and configure an RS485 Expansion Kit. Refer to the RS485 Expansion Kit Installation Guide. http://www.solaredge.com/files/pdfs/RS485_expansion_kit_installation_guide.pdf	☐

4	**RS485 Connection Verification**		
	Press the inverter external LCD light button to display the status screens one after the other until a screen like the following is displayed:		
	4.1	Check the RS485 communication status: • Verify that the number under Prot displays the number of configured devices. • Verify that the number under ## displays the number of communicating devices.	 ☐
	4.2	Check the meter(s): In the meter(s) status screen check that the status is OK. If Comm. Error appears, refer to the troubleshooting section in the supplied installation guide.	 ☐
	4.3	Check meter AC and CT connections including CT direction: Connect the meter to power supply. Check the LEDs: when configured as export/import meter: green=import, red=export.	☐
5	**Check Battery Connection**		
	5.1	Scroll through the menus until you reach the battery status screen. Check the BSN (battery serial number), ID (15 for LG), SOE (battery capacity in percentage), PWR (charge/discharge power), and the Status (Charging/Discharging, Idle, Init or Fault).	 ☐
6	**Battery Firmware Version Check**		
	6.1	Switch OFF the inverter and wait 3 minutes.	☐
	6.2	Select **Communication > RS485-1 > Battery 1 > Battery Info**	 ☐
7	**Setup StorEdge Operating Mode**		
	7.1	Turn ON the inverter.	☐
	7.2	Use the status screens to check charge or discharge according to the current condition.	☐
	7.3	Set up the operating mode according to one of the following options:	
		Maximize Self Consumption	
		7.3.1 Select **Power Control > Energy Manager > Energy Control > Max self-Consume**	☐
		Charge/Discharge Profile Programming	
		7.3.2 Select **Power Control > Energy Manager > Energy Control > Time of Use**	☐
8	**Basic System Operation (optional)**		
	8.1	Turn the AC power to the inverter OFF, and verify that the inverter has switched to backup mode.	☐
	8.2	Turn the AC power to the inverter ON, and verify that the inverter is operating properly.	☐

Support and Contact Information

Australia (+61)	1800 465 567	support@solaredge.net.au
APAC (Asia Pacific) (+972)	073 2403118	support-asia@solaredge.com
China (+86)	21 6212 5536	support_china@solaredge.com
France and Belgium (+33)	0800 917 410	support@solaredge.fr
DACH and Rest of Europe (+49)	089 454 59730	support@solaredge.de
Italy (+39)	0422 053700	support@solaredge.it
Japan (+81)	03 5530 9360	support@solaredge.jp
Netherlands (+31)	0800 0221 089	support@solaredge.nl
New Zealand (+64)	0800 144 875	support@solaredge.net.au
United Kingdom (+44)	0800 028 1183	support-uk@solaredge.com
US & Canada (+1)	510 498 3200	ussupport@solaredge.com
Greece (+30)	00800 125574	support@solaredge.com
Middle East & Africa (+972)	073 2403118	
South Africa (+27)	0800 982 659	
Turkey(+972)	073 240 3118	
Worldwide (+972)	073 240 3118	

Before contact, make sure to have the following information at hand:

- Inverter and power optimizer model numbers
- Serial number of the product in question
- The error indicated on the inverter screen or on the SolarEdge monitoring portal, if there is such an indication.
- System configuration information, including the type and number of modules connected and the number and length of strings.
- The communication method to the SolarEdge monitoring portal, if the site is connected
- Inverter software version as appears in the ID status screen.