StorEdge™ Wiring Guide & On Site Checklist - Europe, Australia & South Africa

This document contains a battery wiring guide and on site checklist with steps for post-installation verification of a StorEdge system. For more details, please refer to the StorEdge Installation Guide supplied with the StorEdge Inverter or StorEdge Interface. For additional assistance contact SolarEdge Support (refer to *Support and Contact Information* on page 11.

Wiring Guide

Wiring Types and Connectors

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

Recommended cable type (min-max cross section)	SolarEdge connector	Type B/B1 Tesla battery connector	Type C Tesla battery connector	Type E/E1 Tesla battery connector/Cable
DC: 6mm² (2.5-6mm²), 600V insulated	BAT DC +	DC +	+ tab	RED
	BAT DC +	DC -	- tab	BLACK
	Ground	Ground	Ground	Green or Yellow/Green
Thermal: 2-wire shielded twisted pair cable 1.5mm² (1.3-2.5mm^2), 600V insulated	Battery Thermal -	THERMAL +	N/A	N/A
Control and monitoring: 5-wire shielded twisted pair cable 0.2mm² (0.2-1.5mm^2), 600V insulated. CAT5 600V insulated can also be used.	En (enable)	ENABLE	EN	EN / Orange
	V+	LOGIC+	LG+	LG+ / Brown
	G (RS485)	LOGIC-	N/A	N/A
	B - (RS485)	COM LO	CM-	CM- / Yellow
	A + (RS485)	COM HI	CM+	CM+ / Blue

Table 1: Wiring Types and Connectors

Wiring Diagrams

The diagrams on the following pages illustrate the connection of the different battery types to the StorEdge Inverter/Interface and meter, and the connection of two batteries to each other. Pay attention to the wire colors and battery DIP switch setup.

Wiring Diagrams – Connecting to the StorEdge Inverter

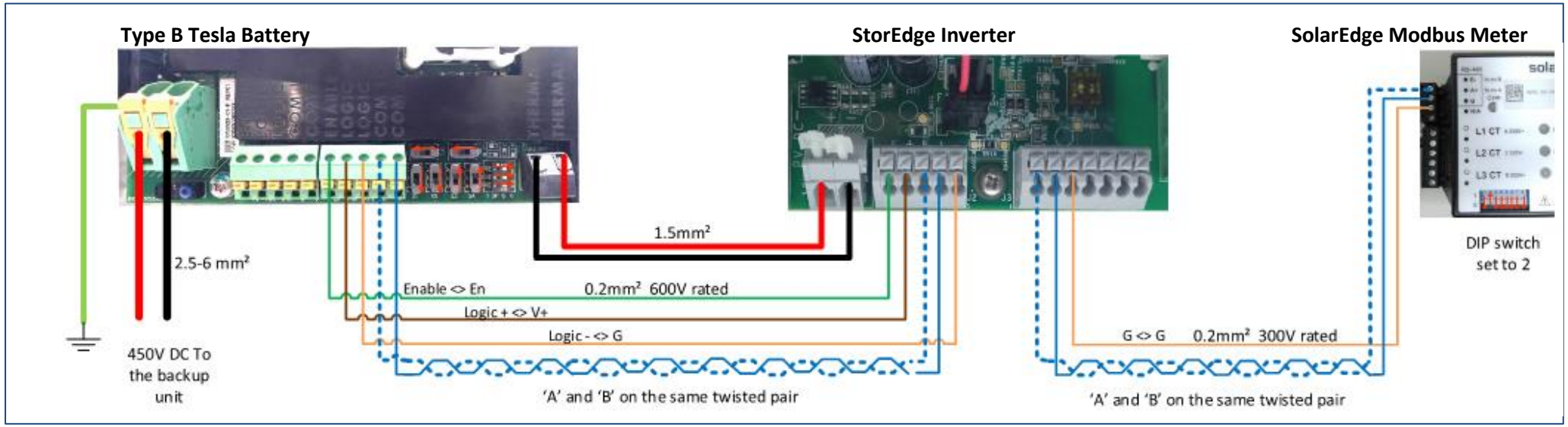


Figure 1: Type B/B1 Battery Connected to a StorEdge Inverter

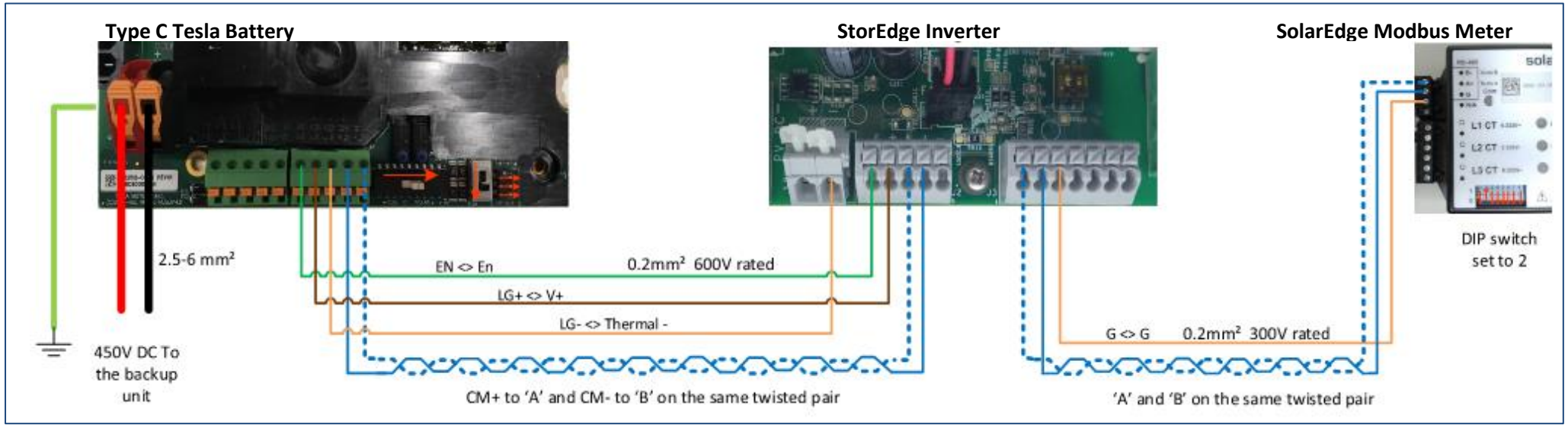


Figure 2: Type C Battery Connected to a StorEdge Inverter

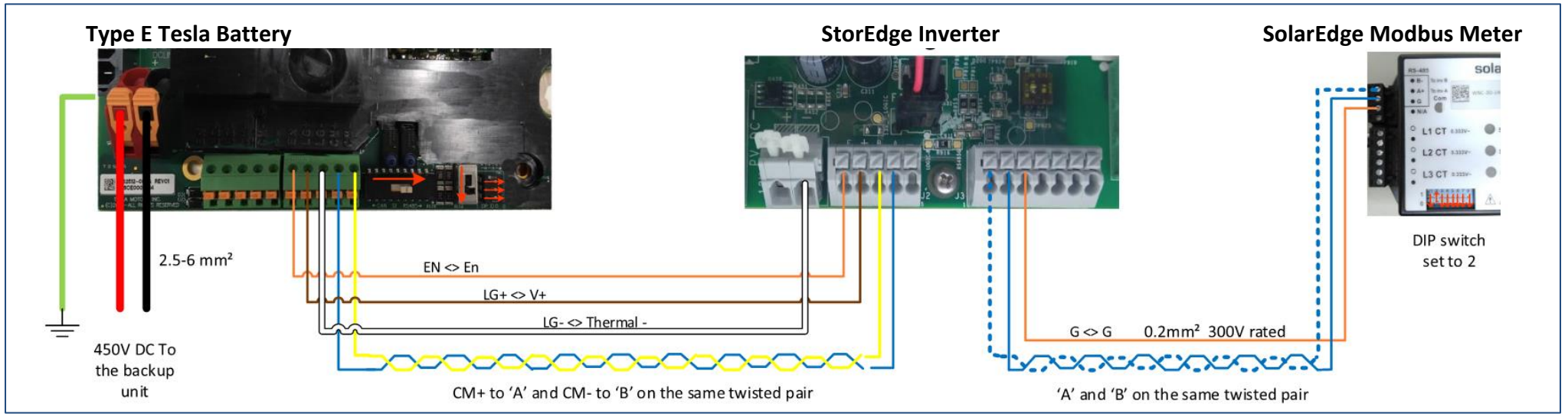


Figure 3: Type E/E1 Battery Connected to a StorEdge Inverter

Wiring Diagrams – Connecting to the StorEdge Interface

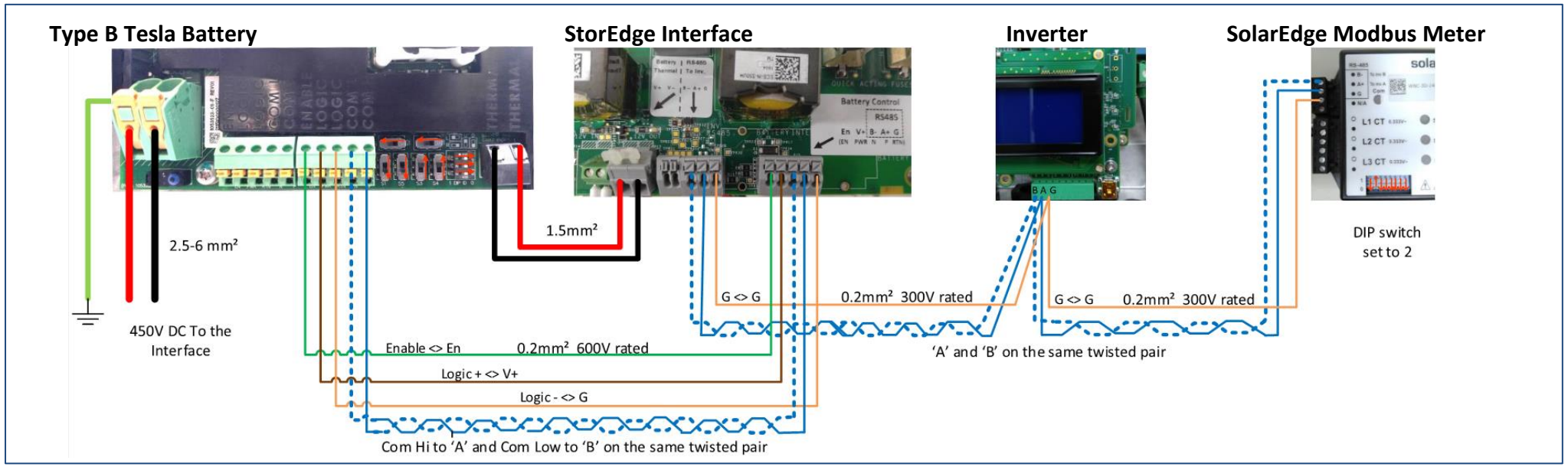


Figure 4: Type B/B1 Battery Connected to a StorEdge Interface

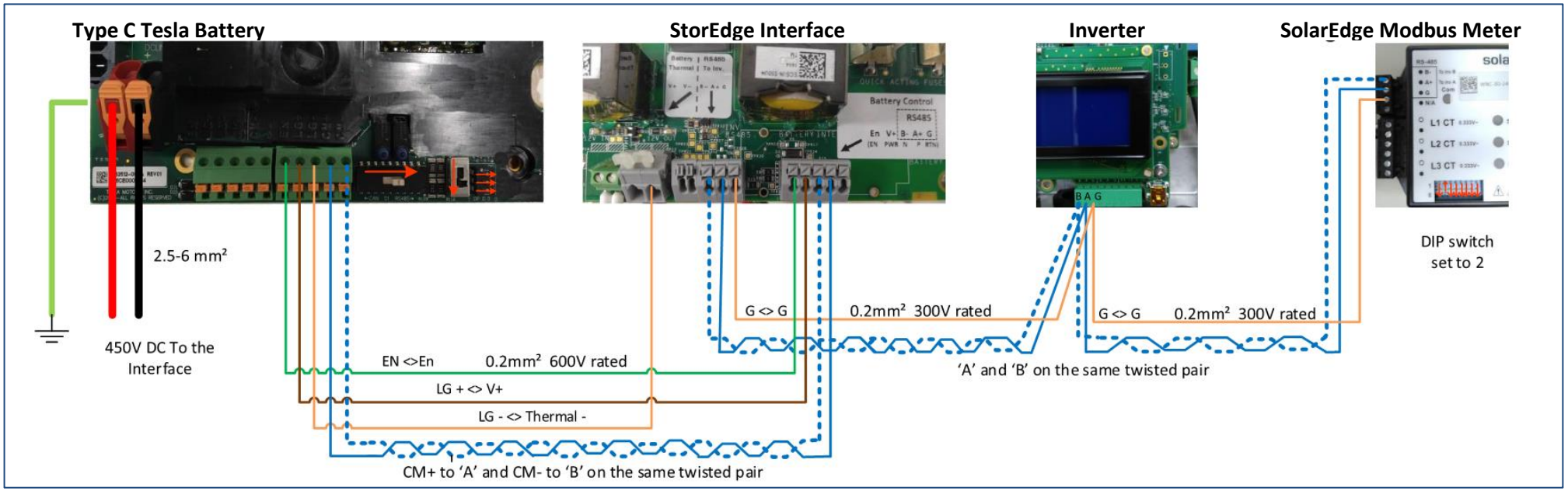


Figure 5: Type C Battery Connected to a StorEdge Interface

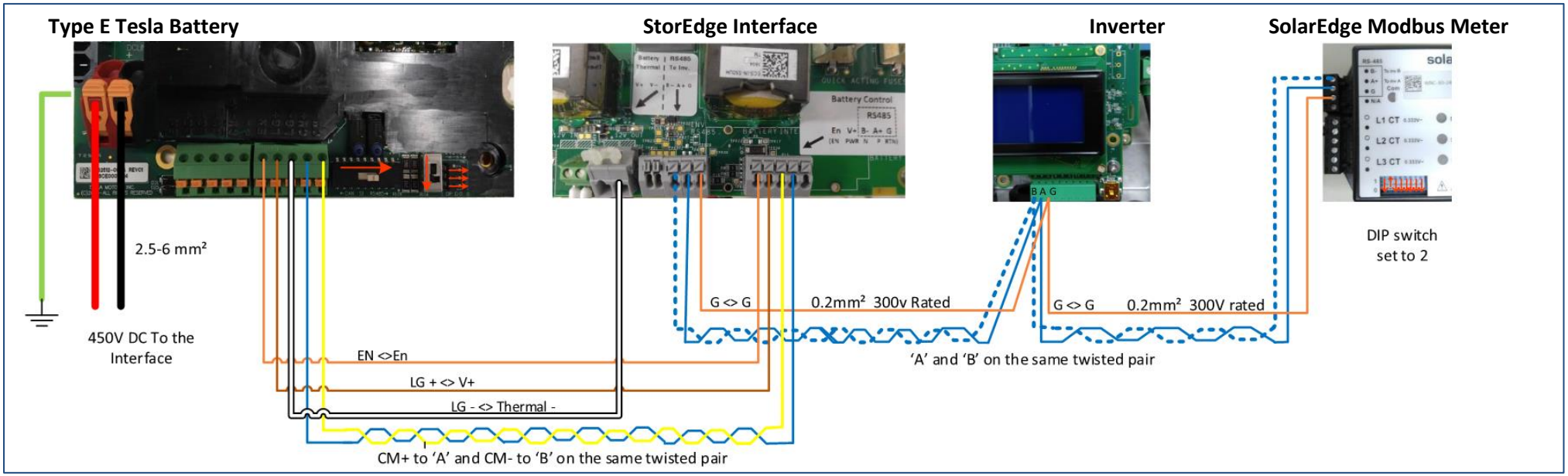


Figure 6: Type E/E1 Battery Connected to a StorEdge Interface

Wiring Diagrams – Two Batteries

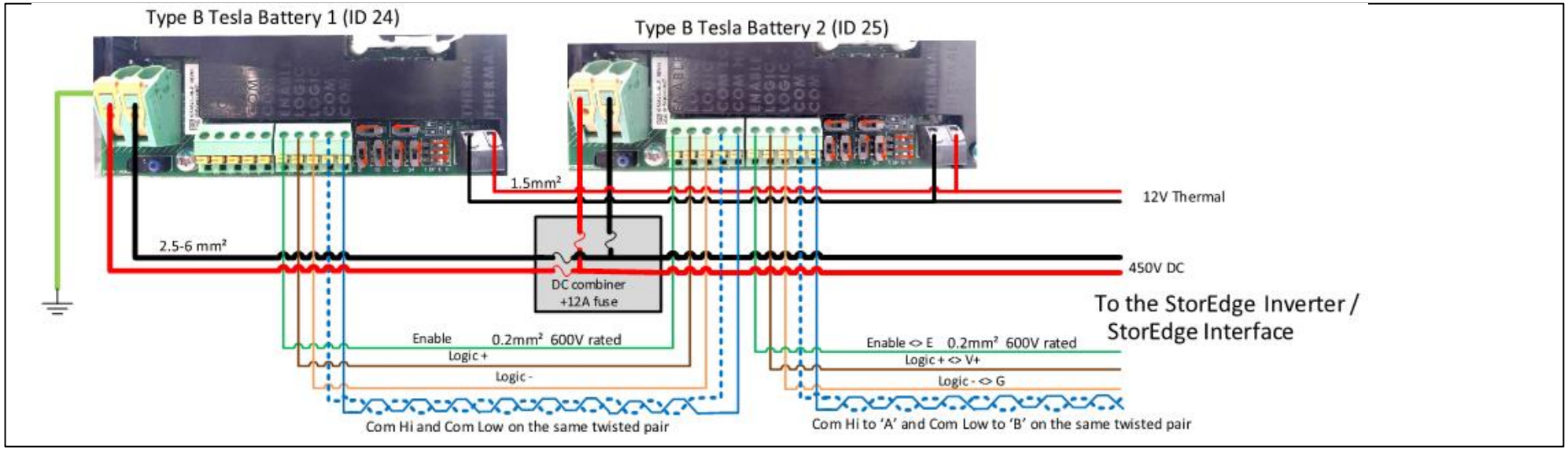


Figure 7: Type B/B1 - Two-Battery Connection

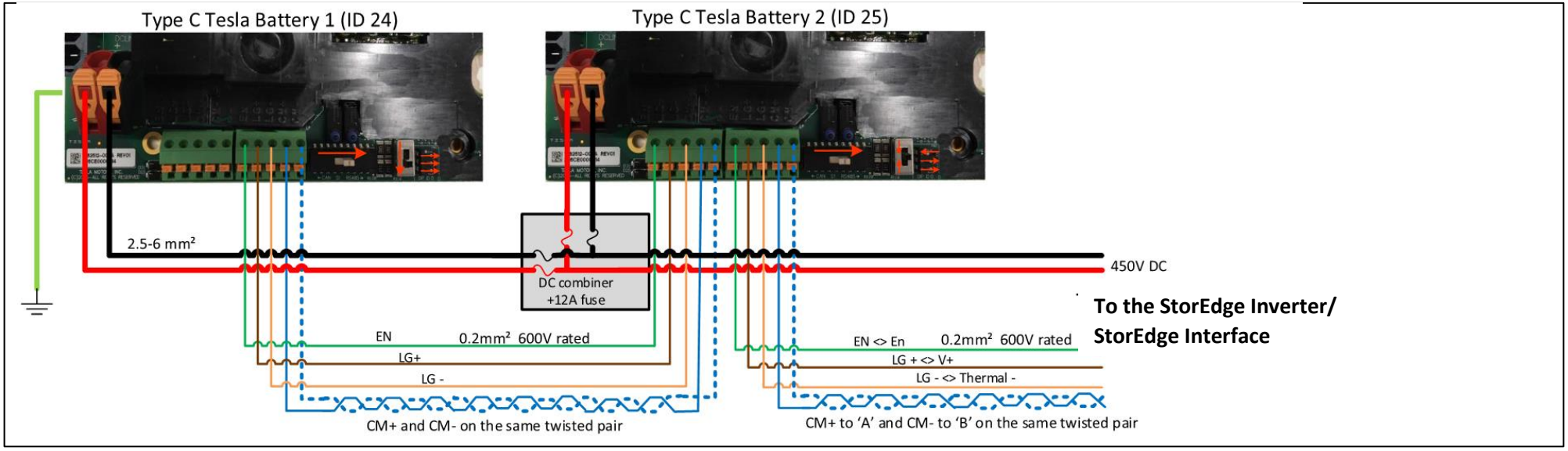


Figure 8: Type C - Two-Battery Connection

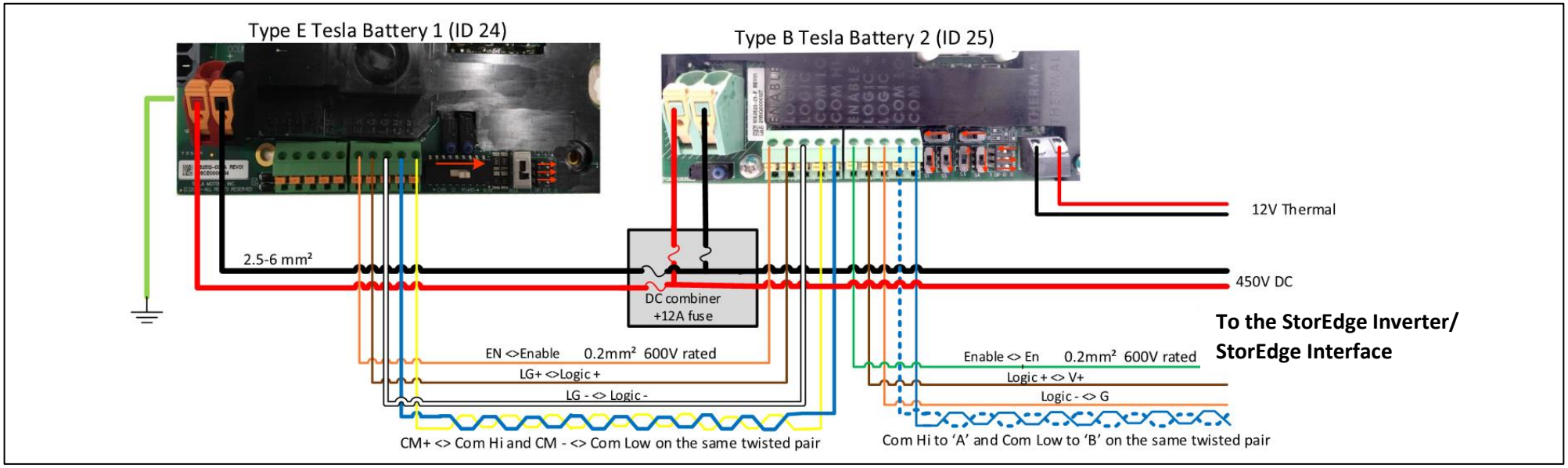


Figure 9: Type B and Type E - Two-Battery Connection

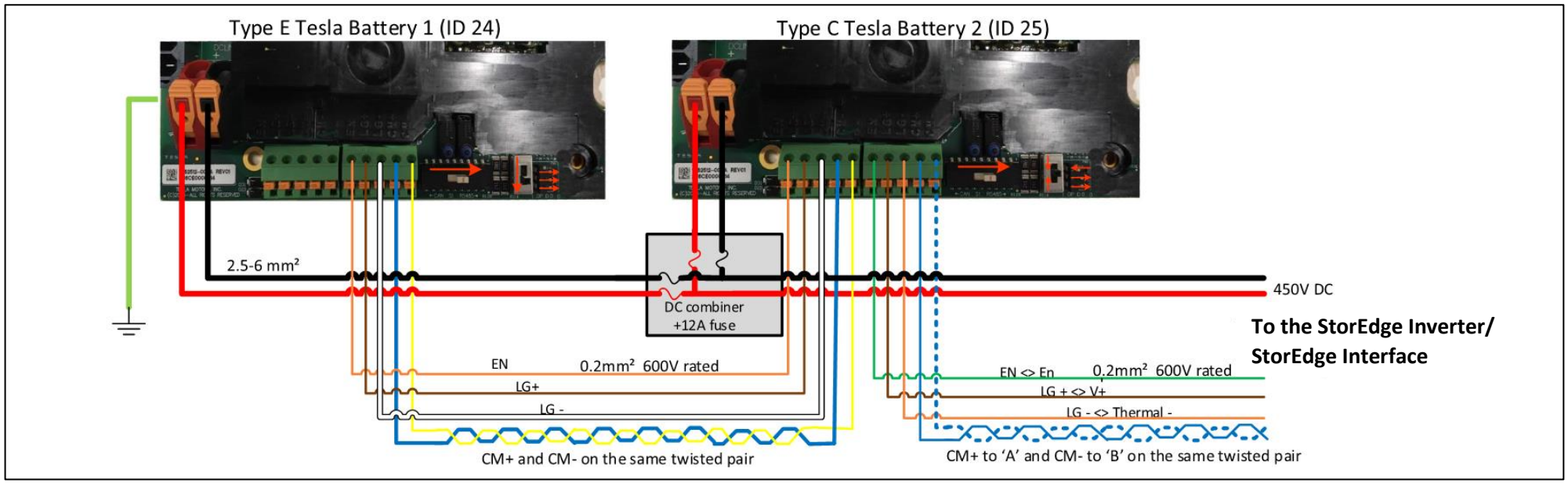


Figure 10: Type C and Type E - Two-Battery Connection

Post Installation Verification and Configuration

Follow the checklist below to verify that the systems is properly connected and configured. The checklist is suitable for a system with a single StorEdge Inverter/Interface, a single battery and a single SolarEdge Modbus Meter installed at the grid connection point (see diagram below). For other system configurations follow the steps in the StorEdge Installation Guide supplied with the StorEdge Inverter or StorEdge Interface

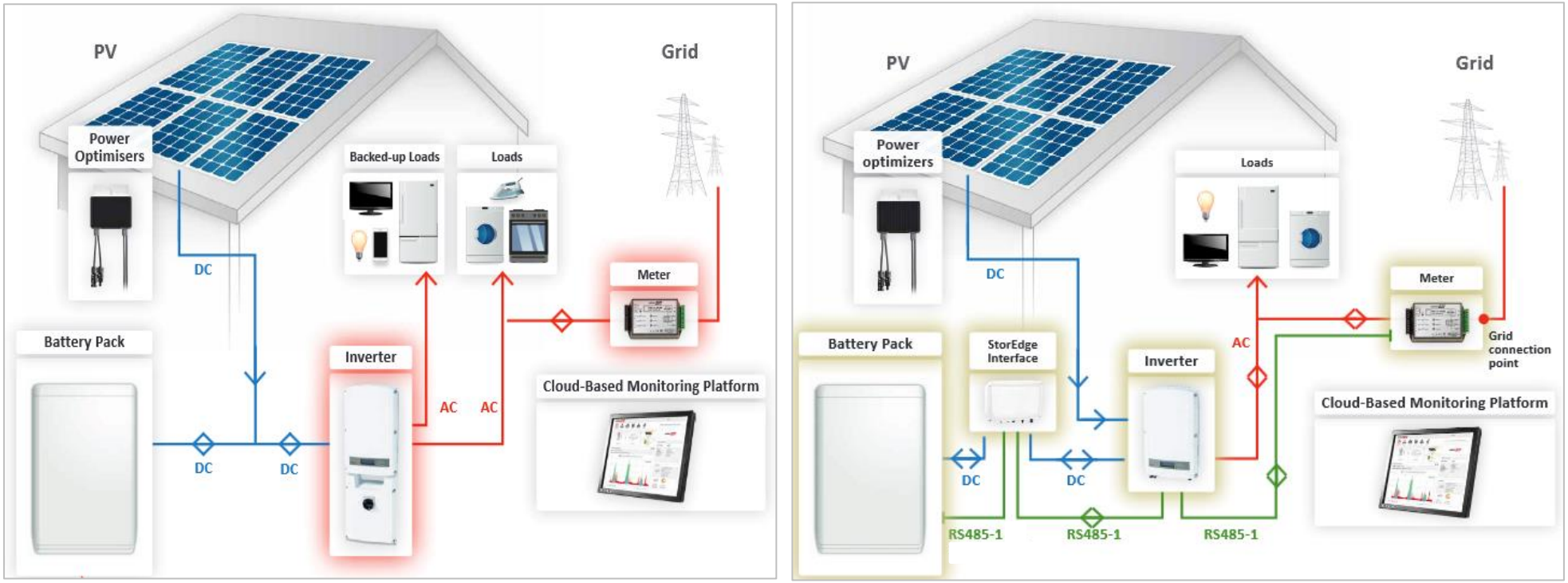
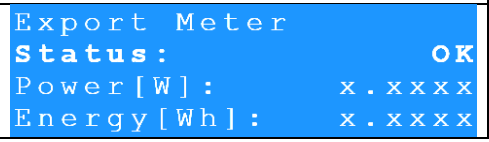
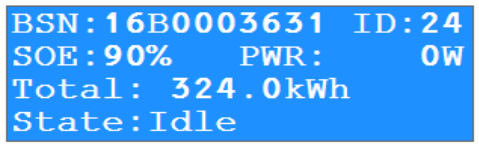
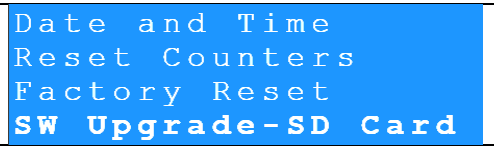
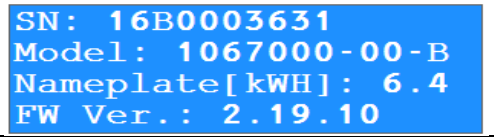


Figure 11: StorEdge System with StorEdge Inverter (left) and with StorEdge Interface (right)

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 thermal controller and send to SolarEdge support (useful for future debugging if necessary.)		☐
	1.3	Take a photograph of the StorEdge Interface (if installed) and send to SolarEdge support.		☐
	1.4	Take a photograph of the installation and send to SolarEdge support.		☐
	1.5	Verify that the battery splash cover is closed.		☐
	1.6	Verify that the backed-up loads panel is wired.		☐
	1.7	Verify that all DC, communication and AC cabling connections are completed as follows:		
		1.7.1	Check AC wiring and circuit breaker.	☐
		1.7.2	Check string DC input voltage. Expect 1V per optimizer in the string.	☐
		1.7.3	Verify that grounding is properly connected in the battery, inverter or StorEdge Interface.	☐
		1.7.4	Check DC wiring to the battery (see Table 1). Pull on the connections and verify that all are secured and tight.	☐
		1.7.5	For Type B batteries: Check thermal connection to the battery (see Table 1). Pull on the connections and verify that all are secured and tight.	☐
		1.7.6	Check connections to the battery including DIP switch setup as described in the supplied installation guide.	☐
		1.7.7	Check connections to the meter.	☐
		1.7.8	Check connections between the StorEdge Interface and the inverter (if applicable).	☐
		1.7.9	Check that a 9V battery is installed in the StorEdge Inverter (if applicable).	☐
		1.7.10	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; when configured as consumption meter LED should be green.	☐
		1.7.11	Check connection to the internet with one of the following options: Ethernet, Wi-Fi, Cellular, ZigBee Module.	☐
2	**Commissioning**			
	2.1	Switch on the inverter AC.		☐
	2.2	Activate the inverter using the SE card.		☐
	2.3	Perform pairing when the modules are exposed to sunlight.		☐
	2.4	Switch the inverter ON/OFF switch to OFF.		☐
3	**RS485 Configuration Verification (for 1 Battery and 1 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**		

Step		Verification Action		Checked
		3.3.1	Setup > Communication > RS485-1 > **Multi Devices**	☐
	3.4	**Meter**		
		3.4.1	Setup > Communication > RS485-1 > Meter 2 > Meter ID (2), Device Type <MTR>, Protocol<WN>, CT Rating (check 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 Device ID is set to **2**.	☐
		3.4.5	Verify CT value that appears on the CT label: CT Rating > <xxxxA>.	☐
		3.4.6	If CT resets to 0, check the communication to the meter.	☐
		3.4.7	For a meter installed at the grid connection point select **Meter Func.> Export+Import.**	☐
	3.5	**Battery**		
		3.5.1	Setup > Communication > RS485-1 > Battery 1 > **Battery ID (24).**	☐
	3.6	**Optional: RS485 Expansion Kit**		
		3.6.1	For a multi-inverter system install and configure an RS485 Expansion Kit. Refer to its 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: 	☐
		4.1.1	Verify that the number under Prot displays the number of configured devices.	☐
		4.1.2	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. 	☐
5	**Check Battery Connection**			
	5.1		Scroll through the menus until you reach the battery status screen. Check the battery information: BSN (battery serial number), ID (should be 24; 25 for a 2nd battery), SOE (battery capacity in percentage), PWR (charge/discharge power), Total (total discharged energy) and the State (Charging/Discharging, Idle, Init or Fault). 	☐

Step		Verification Action		Checked
6	**Inverter + Battery Firmware Upgrade**			
	6.1	Insert a micro SD card with the latest firmware version available on http://solaredge.com/storedge/firmware.		☐
	6.2	Close the inverter cover and the StorEdge Interface cover (if applicable).		☐
	6.3	Switch on both the inverter ON/OFF switch and the StorEdge Interface (if applicable).		☐
	6.4	Using the external LCD light button go to, Maintenance > SW upgrade > Yes, wait for Running script to finish, duration 5min + 25min per battery.		☐
	Battery Firmware Version Check			
	6.5	Switch OFF the inverter and wait 3 minutes.		☐
	6.6	Setup > Communication > RS485-1 > Battery 1 > **Battery Info**		☐
7	**Setup StorEdge Operating Mode**			
	7.1	Turn ON the inverter.		
	7.2	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	Setup > Power Control > Energy Manager > Energy Control > **Max self-Consume**	☐
		Charge/Discharge Profile Programming		
		7.3.2	Setup > Power Control > Energy Manager > Energy Control > **Time of Use**	☐
		Backup Only		
		7.3.3	Setup > Power Control > Energy Manager > Energy Control > **Backup only**	☐
	7.4	Optional: Set additional StorEdge options		
		AC Charge		
		7.4.1	Setup > Power Control > Energy Manager > Storage Ctrl > AC Charge > **Enable**	☐
		Backup reserve		
		7.4.1	Setup > Power Control > Energy Manager > Storage Ctrl > Backup Rsvd > **{Value}**	☐

Support and Contact Information

If you have technical queries concerning our products, please contact us:

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)	800 784 824	support@solaredge.it
Japan (+81)	03 5530 9360	support@solaredge.jp
Netherlands (+31)	0800 0221 089	support@solaredge.nl
United Kingdom (+44)	0800 028 1183	support-uk@solaredge.com
US & Canada (+1)	510 498 3200	ussupport@solaredge.com
Greece (+30)	00800 125574	
Middle East & Africa (+972)	073 2403118	
South Africa (+27)	0800 982 659	support@solaredge.com
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.