



500A

Smart Shunt

PRODUCT MANUAL



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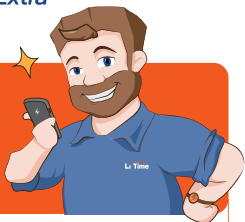
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please contact us at service@litime.com.

IMPORTANT SAFETY INSTRUCTIONS

This manual contains important safety, installation, and operation instructions for the smart shunt. Please read all guidelines in the manual carefully to avoid incorrect connections that could cause the smart shunt to malfunction and/or create a fire hazard.

GENERAL

- Read all the instructions and cautions in the manual before the installation.
- Do not operate beyond the shunt's voltage and current range; otherwise, the shunt will be damaged.
- There are no user-serviceable parts inside this product. Do not disassemble or attempt to repair the product.
- The product should not be exposed to sunlight or an environment with a lot of UV radiation for a long time during use or storage, otherwise it will shorten the service life of the smart shunt.
- Do not move the product violently while it is in normal operation to avoid irreparable damage to the internal circuitry.

BATTERY SAFETY

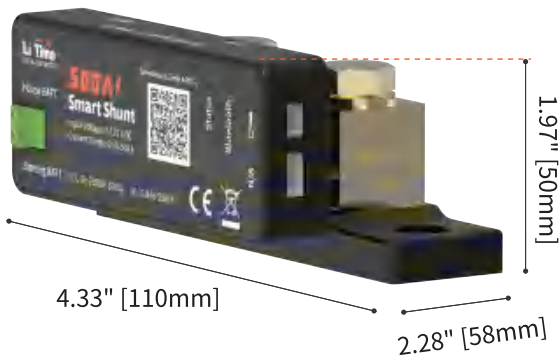
- Carefully read battery manuals, and operate the battery under the battery manufacturer's guidance.
- To prevent the battery from being short-circuited, **NO** metal objects shall be placed near the battery, and **AVOID** direct contact between the positive (+) and negative (-) terminals of the battery.
- To measure the correct values and battery safety, do not reverse the positive (+) and negative (-) terminals of the battery.
- Be very careful when installing lead-acid batteries. Wear eye protection and have fresh water available in case there is contact with the battery acid.
- Keep the lead-acid battery away from fire sparks, as it may produce flammable gas.

If you have any questions or need any help, please feel free to contact us (and leave your contact phone number) at service@litime.com, we will offer phone or email support in 12hrs.

PRODUCT OVERVIEW

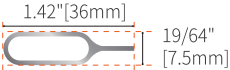
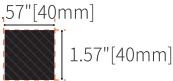
LITIME 500A SMART SHUNT

House Battery Voltage Range	8V to 120V
Starting Battery Voltage Range	0V to 120V
Current Range	0.05A to 500A
Wiring Terminals	M8



ADDITIONAL COMPONENTS

Additional components are included in the package.

Accessories	Image
3FT (1M) B+ Sampling Wire for House Battery	
10FT (3M) B+ Sampling Wire for Starting Battery	
Screwdriver ^①	
Reset Pin	
Terminal Wrench	
Mounting Screws	
3FT (1M) Remote Temperature Sensor ^②	
Magic Sticker	

- ① The screwdriver is intended for pressing the product orange parts on the house/starting battery ports to connect sampling wires.
- ② Stick the remote temperature sensor to the house battery surface with the magic sticker to measure the surrounding temperature.

FCC STATEMENT (FCC ID: 2BDSV-S500A)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

ISED STATEMENT (IC: 32466-S500A)

English: This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

The digital apparatus complies with Canadian CAN ICES-3 (B)/NMB-3(B).

French: Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada.

L'exploitation est soumise aux deux conditions suivantes :

- (1) Cet appareil ne doit pas provoquer d'interférences.
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

l'appareil numérique du ciem conforme canadien peut - 3 (b) / nmb -3 (b).

This device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS 102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

cet appareil est conforme à l'exemption des limites d'évaluation courante dans la section 2.5 du cnr - 102 et conformité avec rss 102 de l'exposition aux rf, les utilisateurs peuvent obtenir des données canadiennes sur l'exposition aux champs rf et la conformité.

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment.

Cet équipement est conforme aux limites d'exposition aux rayonnements du Canada établies pour un environnement non contrôlé.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

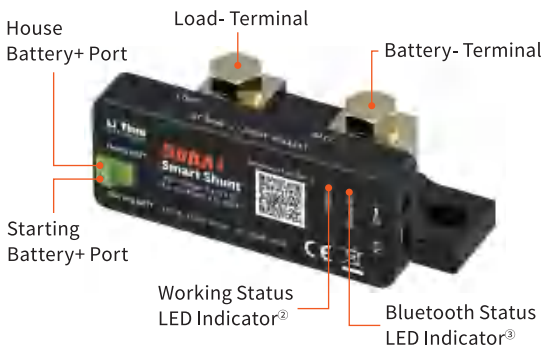
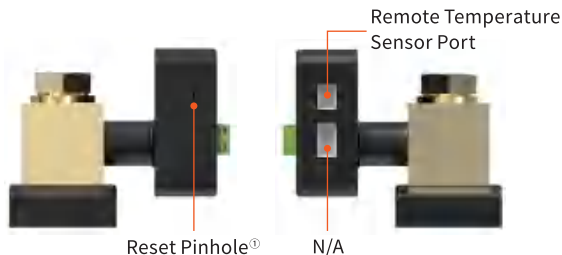
Cet équipement doit être installé et utilisé à une distance minimale de 20 cm entre le radiateur et votre corps.



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IDENTIFICATION OF PARTS

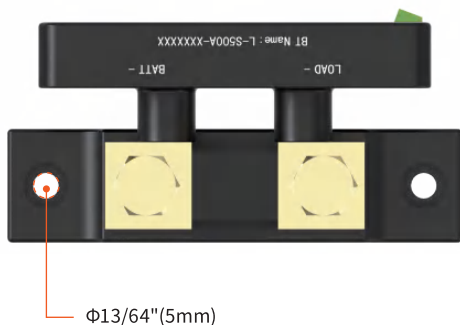


- ① If the device is unresponsive, insert the reset pin and hold for 1 second to reboot. To restore factory default settings (including the password), hold the pin for over 3 seconds.
- ② It flashes every 2 seconds during normal operation and every 0.5 seconds when an alarm is triggered.
- ③ It flashes every second while not connected and remains solid when connected.

INSTALLATION

MOUNTING

The shunt can be stably placed or mounted on a flat surface. There are two $\Phi 13/64"$ (5mm) holes for mounting purposes located in the shunt that can be screwed onto the flat surface with the provided mounting screws.

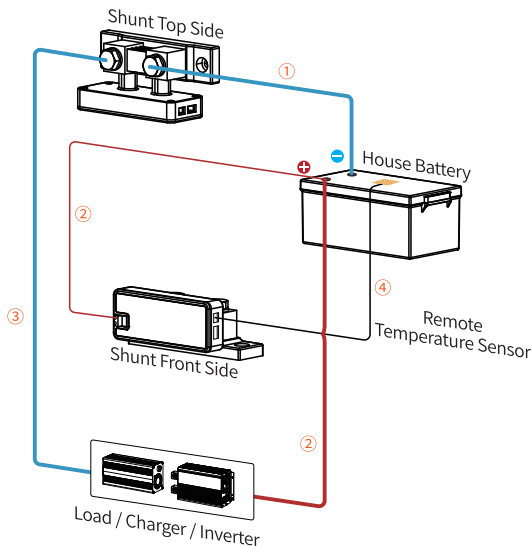


CONNECTION

Preparation Before Connection

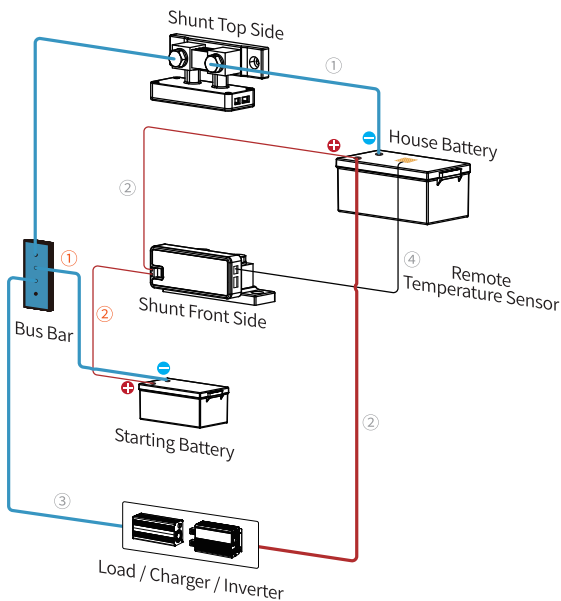
Before connecting, wear Insulating gloves, **fully charge or discharge the house battery/battery system to get the accurate SOC.**

Connect to the House Battery & Load



- Step1** Connect the Battery- Terminal of the shunt to the negative(-) terminal of the house battery.
- Step2** Connect the House Battery+ Port on the shunt to the house battery's positive(+) terminal with the B+ sampling wire, and connect the positive(+) terminal of the load/charger/inverter to the same house battery terminal with a suitable cable.
- Step3** Connect the Load- Terminal of the shunt to the negative(-) terminal of the load/charger/inverter.
- Step4** Plug the remote temperature sensor into the shunt's Remote Temperature Sensor port and secure the probe to the battery surface with the magic sticker.

Connect to the Starting Battery

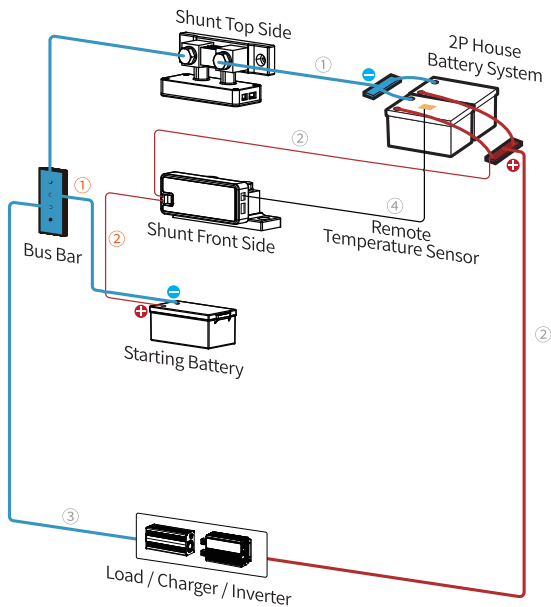


Step1 Connect the Load- Terminal of the shunt to the negative(-) terminal of the starting battery.

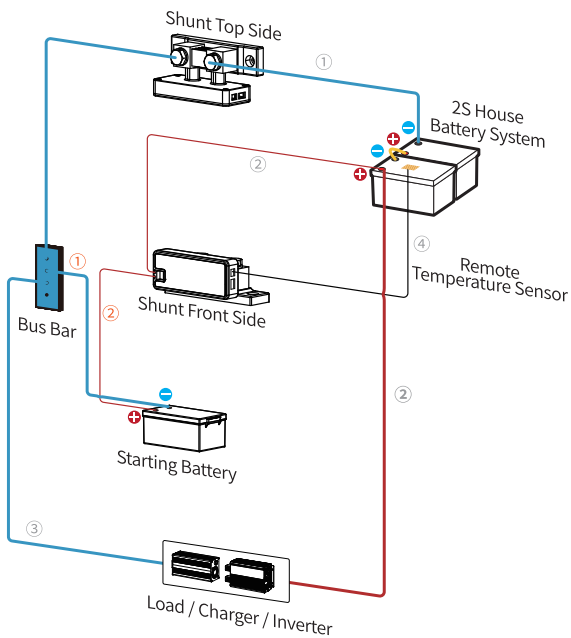
Step2 Connect the Starting Battery+ Port on the shunt to the starting battery positive(+) terminal via the B+ sampling wire.

Wiring Diagram Reference

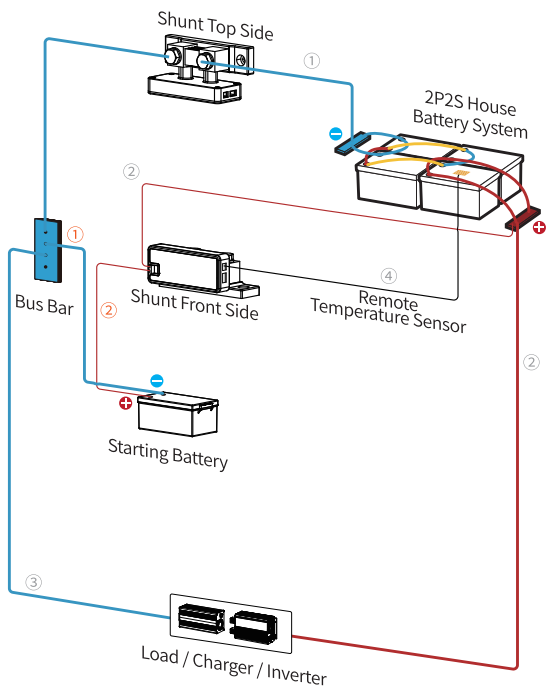
2P House Battery System + 1 Starting Battery



2S House Battery System + 1 Starting Battery



2P2S House Battery System + 1 Starting Battery



BLUETOOTH CONNECTION & SETUP

APP CONNECTION

APP Download

The Smart Shunt is equipped with a built-in Bluetooth module that can be monitored via the LiTime APP available on the Apple APP Store and Google Play.



Device Connection

Step
1

Turn on the phone's Bluetooth.

Step
2

Pair the smart shunt with the LiTime APP and effortlessly keep track of the battery's real-time status.

Scan QR Code



Included Sticker

Search Device



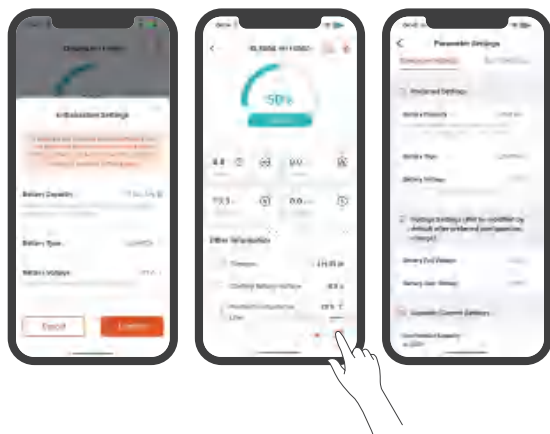
APP SETUP

Initialization Settings

Set the **"Battery Capacity"**, **"Battery Type"**, and **"Battery Voltage"** parameters for the battery or battery system via the LiTime APP before the first use. Settings can be adjusted in the Device Control → Parameter Setting page.

Other settings will be automatically adjusted to the recommended value based on different initialization settings, which can be adjusted as required.

Upon completing the setup, the app will display key status data of the battery or battery system, like SOC (State of Charge), remaining usable time and capacity, real-time power and current, etc.



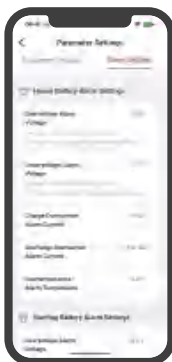
Manual Calibration

It can be calibrated manually if the data is inaccurate. Charge the battery completely and then click to sync the capacity to 100%. Then, discharge the battery completely and click to sync the capacity to 0%.



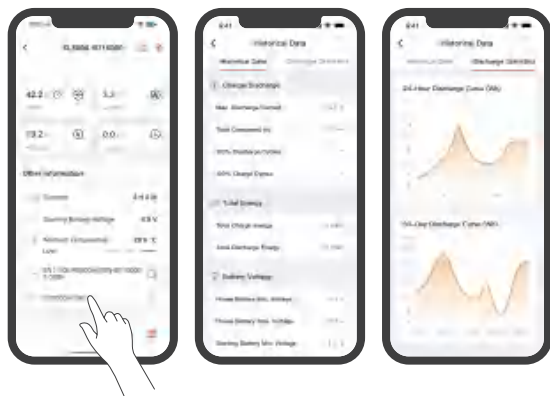
Alarm Settings

The alarm parameters will automatically match the default values after the initial parameters are selected, and can be adjusted according to actual needs.



Historical Data

The 24-hour discharge curve displays hourly electricity consumption each day. The 30-day discharge curve displays daily electricity consumption over the past 30 days. The data is not recorded when the device is powered off.



SPECIFICATIONS

Item		Parameter
Input Voltage Range	House Battery	8V to 120V DC
	Starting Battery	0V to 120V DC
Current Range		0.05A to 500A
Battery Capacity (Ah)		0Ah to 6500Ah
Accuracy	Voltage	$\pm 1\%$
	Current	$\pm 1\%$
	Capacity	$\pm 1\%$
	Temperature	$\pm 3.6^{\circ}\text{F} / \pm 2^{\circ}\text{C}$
Operating Power Consumption		$< 0.1\text{W}$
Compatible Battery Type		LiFePO ₄ / GEL / FLA / AGM / SEL
Wiring Terminals		M8
Measuring Temperature Range		-4°F to 302°F / -20°C to 150°C
Operating Temperature Range		-4°F to 113°F / -20°C to 45°C
Storage Temperature Range		59°F to 77°F / 15°C to 25°C
Dimension		4.33*2.28*1.97 in/ 110*58*50 mm
Net. Weight		Approx. 0.58 lbs / 0.265 kg

TROUBLESHOOTING

Problem	Possible Cause	Solution
Current readings are reversed: charging shows as negative, and discharging shows as positive.	The Battery- & Load-Terminals of the shunt are connected in reverse.	Adjust the wiring: Connect Battery-Terminal to the negative(-) terminal of the house battery, and Load- Terminal to the negative(-) terminal of the load/ charger/inverter
Abnormal temperature reading or unable to read temperature.	The temperature sensor wiring is loose.	Confirm that the temperature sensor wire is normal and the installation contact is tight.
Abnormal current reading with significant fluctuations.	1. Loose terminals or ports of the shunt. 2. Loose battery terminals. 3. Loose terminals of the load/charger/ inverter.	Check and ensure all terminals and ports are tightened.
Abnormal voltage reading with significant fluctuations.		

Problem	Possible Cause	Solution
Abnormal SOC reading (e.g., not showing 100% when full, or not showing 0% when empty).	1. Incorrect initial capacity setting. 2. Battery capacity attenuation over time and usage.	1. Reset the battery capacity according to the battery bank specification. 2. Charge the battery completely and then click to sync the capacity to 100%. Then, discharge the battery completely and click to sync the capacity to 0%. 3. Fine-tune the SOC in the settings according to the actual situation.
The shunt displays a small current when there is no charging or discharging.	There are minor power consumption in the device and the wire.	Clear the interference current in the "Zero Current" setting while in an idle state.



Miss the code,
Miss a Lot.

