SOLAX



TB-LD160
TB-LD143

Installation Manual

Version 4.0

www.solaxpower.com

eManual in the QR code or at www.solaxpower.com

Safety

General Notice

1. Contents might be updated or revised as needed. SolaX reserves the right to make improvements or changes in the product(s) and the program(s) described in this manual without the prior notice.
2. The installation and maintenance can only be performed by qualified personnel who:
   - Are licensed and/or satisfy state and local regulations;
   - A low-voltage operator is required to obtain any Certifications for Low-voltage Electrician.
3. Before installing the device, carefully read, fully understand and strictly follow the detailed instruction of the user manual and other related regulations. SolaX shall not be liable for any consequences caused by the violation of the storage, transportation, installation, and operation regulations specified in this document and the user manual.
4. Use insulated tools when installing the device. Individual protective tools must be worn during installation, electrical connection and maintenance.
5. Please visit the website www.solaxpower.com of SolaX for more information.

Descriptions of Labels

	CE mark of conformity		Caution, risk of danger
	The battery system must be disposed of at a proper facility for environmentally-safe recycling.		Caution, risk of electric shock
	The battery pack may explode.		Keep the battery system away from children.
	Read the enclosed documentations.		Do not dispose of the battery pack together with household waste.
	Keep the battery system away from open flames or ignition systems.		Do not dispose of the battery pack together with household waste.

General Safety Precautions

1. Only qualified personnel should handle, install, perform wiring and service of the battery pack.
2. Keep the battery pack away from areas with explosive hazards or where flammable or combustible materials are stored. Store and install it in a cool, clean, and dry environment, and free from heat, water, dust, dirt and debris.
3. Avoid overvoltage conditions and ensure correct wiring to prevent damage to the battery pack and reduce the risk of combustion.
4. Battery pack rupture might lead to leakage of electrolytes or flammable gas.
5. Ensure that the grounding cable is connected before handling the battery pack.

Battery Handling Guide

DOs

- DO keep the battery pack out of reach of children and animals;
- DO install and perform wiring of the device in compliance with the local standards and regulations;
- DO seal the outer cable connection hole to prevent ingress of foreign objects.

DON'Ts

- DON'T use SolaX lithium battery in Lead-acid mode. Lead-acid mode not only reduce the lifespan of lithium batteries, but may also cause safety issues under extreme conditions. Any consequences arising from the use of lead-acid mode shall be borne by users themselves, and SolaX will not provide warranty!
- DON'T expose the battery pack to open flames or temperatures exceeding 140°F/60°C;
- DON'T step on the packaging of the battery pack;
- DON'T drop, deform, impact, cut, or puncture the battery pack with sharp objects, or place anything on top of the battery pack;
- DON'T mix battery packs of different models or brands;
- DON'T charge or discharge a damaged battery pack;
- DON'T dispose of the battery pack in a fire.

Response to Emergency Situations

In case the battery pack leaks electrolyte or other chemical materials, or generates gas due to leakage, avoid contact with any leaked substances. If accidentally contacted, please do as follows:

- In case of inhalation: Leave the contaminated area immediately, and seek medical attention at once;
- In case of contact with eyes: Rinse eyes with running water for 15 minutes, and seek medical attention;
- In case of contact with skin: Wash the contacted area thoroughly with soap, and seek medical attention;
- In case of ingestion: Induce vomiting, and seek medical attention.

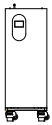
If a fire breaks out where the battery pack is installed, please do as follows:

- In case the battery pack is charging when a fire breaks out, and if it is safe to do so, disconnect the battery pack circuit breaker to cut off the power supply;
- In case the battery pack is not on fire yet, use a Class ABC fire extinguisher or a carbon dioxide extinguisher to extinguish the fire;
- In case the battery pack is heated above 302°F/150°C, it might catch fire. Do not approach and keep away from it;
- In case the battery pack catches fire, do not attempt to extinguish the fire and evacuate immediately.

Effective ways to deal with accidents:

- In case a battery pack is submerged, do not use it again, and contact qualified personnel for assistance;
- In case a battery pack is damaged, stop using it at once. Place the damaged pack in a separate place, and contact the local fire department or qualified personnel for treatment;
- If you suspect a battery pack is damaged, contact SolaX immediately for assistance.

Packing List

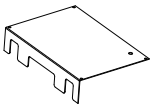

Battery pack × 1


L-shaped bracket × 2


M5 screw × 8


Expansion bolt × 4


Self-tapping screw × 4


Top cover × 1


M8 screw × 4

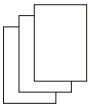
Power cable (-)
(1500 mm) × 1


Power cable (+)
(1500 mm) × 1

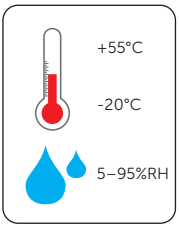

Communication cable
(1500 mm) × 1


Ring terminal (for
PE cable) × 2

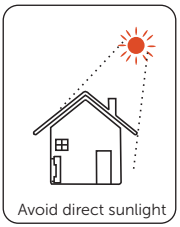

Ring terminal (for
power cable) × 2


Document

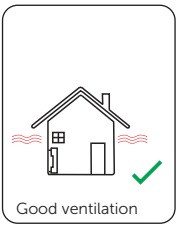
Mounting Location

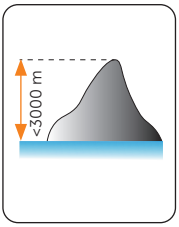





Avoid direct sunlight


Avoid rain exposure


Good ventilation



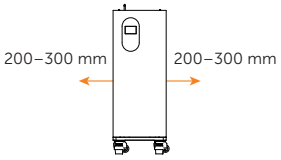

Keep away from combustibles


Keep away from antenna

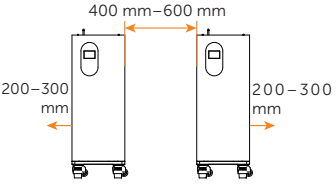

Keep away from explosive materials

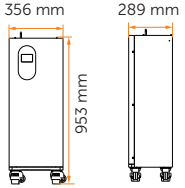

Keep away from corrosive materials

Installation option A



Installation option B





Weight:
TB-LD160: 121 ± 1 kg
TB-LD143: 117 ± 1 kg

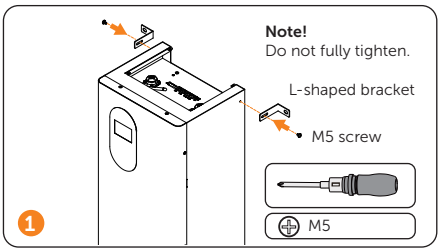
Mechanical Installation

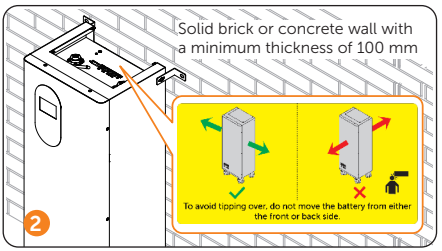
WARNING!

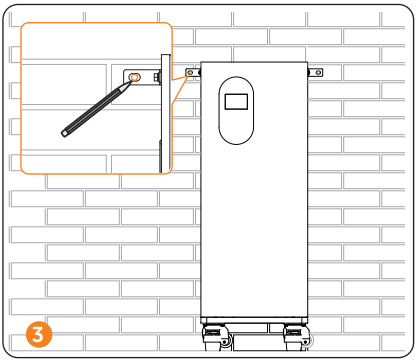
- The battery must be powered off during the entire installation process.

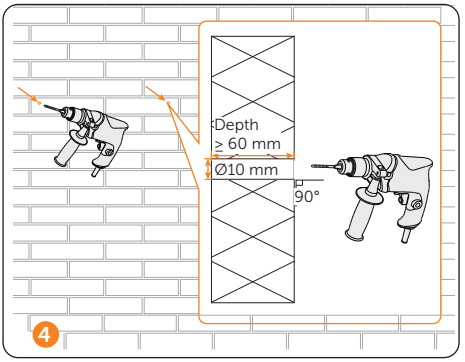
NOTICE!

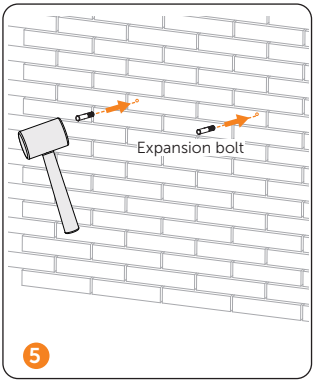
- Push sideways (left and right) only. Avoid front and back movements to prevent the battery from falling over.
- Installation steps for each battery pack are the same. The following steps take a battery pack for instance.
- Up to 16 battery packs can be installed together in the case of capacity expansion.

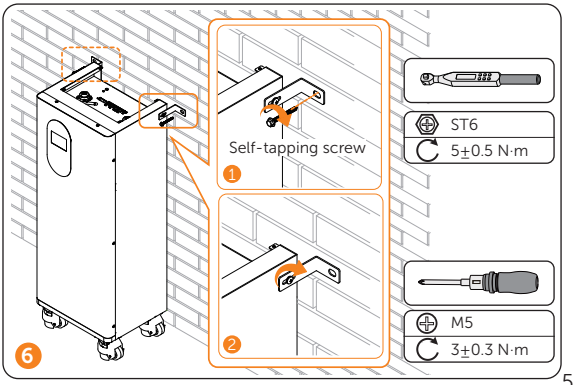




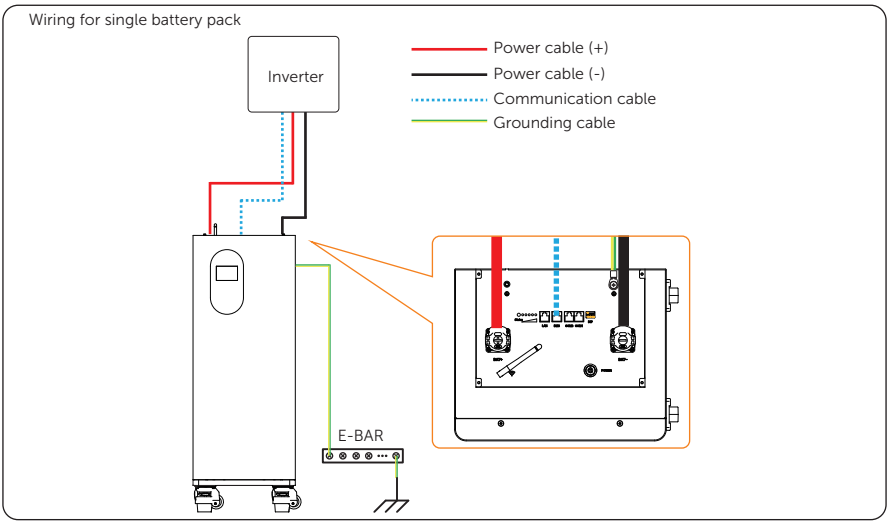


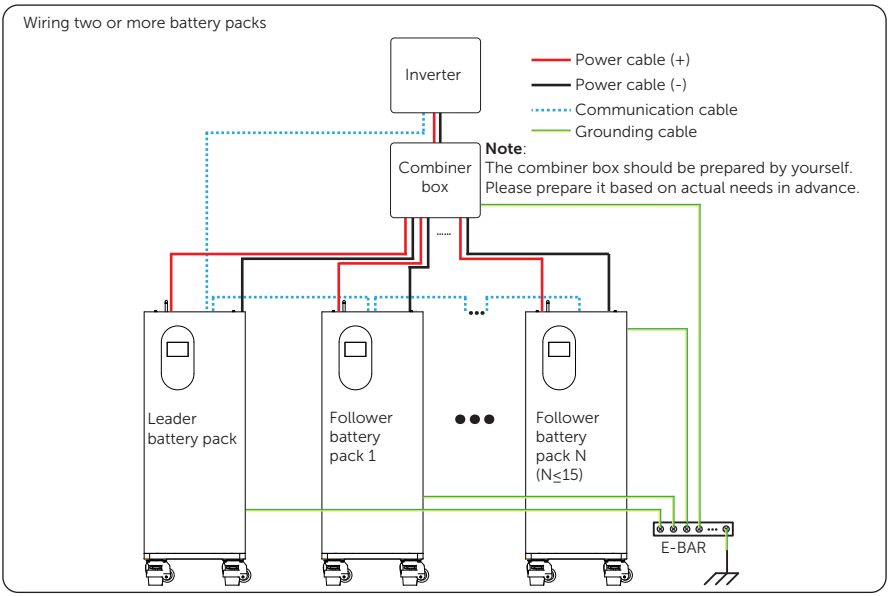






System Diagram



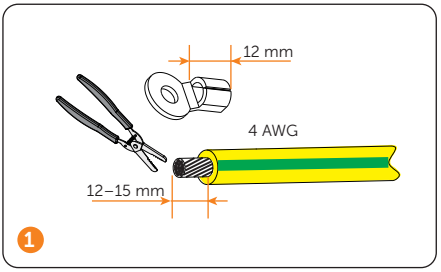


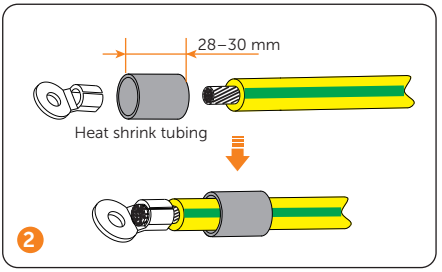
Communication cable connection for two or more battery packs:

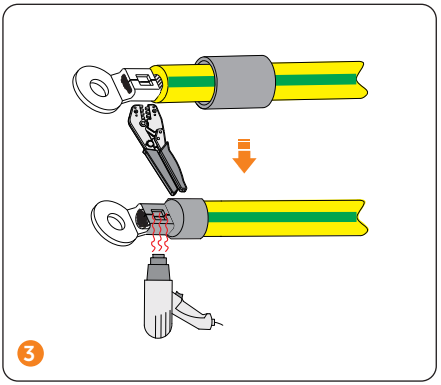
- **BMS** port of leader battery pack to **BMS** port of inverter.
- **COM2** port of battery pack to **COM1** port of next battery pack.

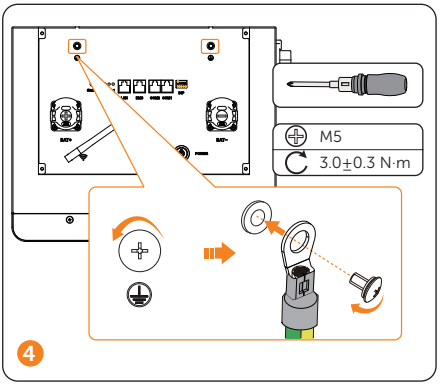
PE / Communication / Power Cable Connection

PE Connection

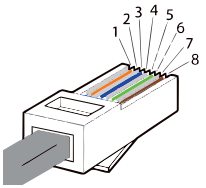








Communication Connection

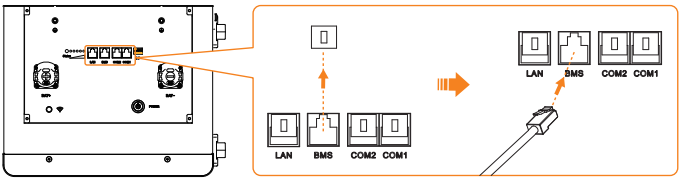


Pin color
1: White with orange stripes
2: Orange
3: White with green stripes
4: Blue
5: White with blue stripes
6: Green
7: White with brown stripes
8: Brown

Pin for BMS	Pin for COM1	Pin for COM2
1: RS485B	1: Up out	1: Next in
2: RS485A	2: GND	2: GND
3: GND	3: Wake up	3: Wake up
4: CAN-H	4: CAN-H	4: CAN-H
5: CAN-L	5: CAN-L	5: CAN-L
6: /	6: Up in	6: Next out
7: LEADER-IN	7: /	7: /
8: /	8: GND	8: GND

Note!

When you need to make communication cable(s), please strictly follow the Pin definitions.



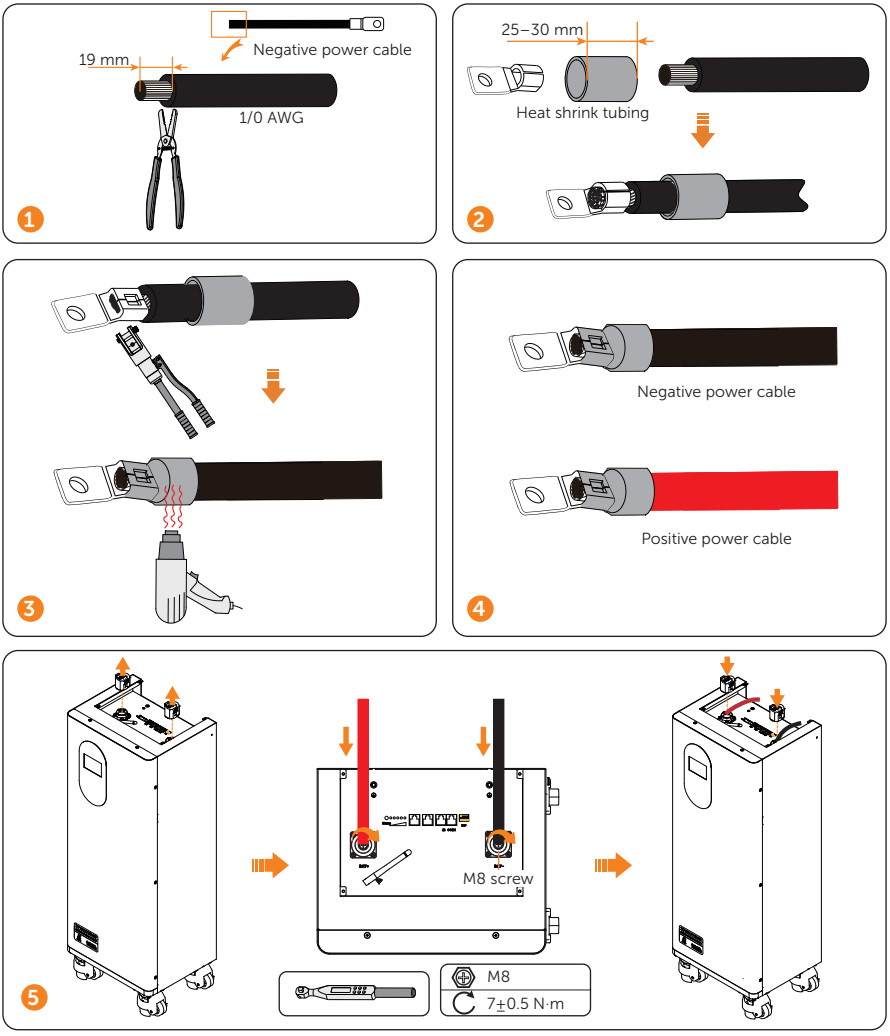
* In order to protect terminals, only remove the waterproof cap as needed, and keep the unused waterproof caps on terminals. Here take BMS port as an example.

Power Cable Connection

For the power cable from the packing list, one end of it is already crimped for connecting the battery pack, you have to crimp another end of it for connecting another device.

WARNING!

- Cable connection order: Negative power cable → positive power cable.

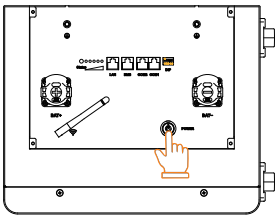


For details about the connection on the inverter side or combiner box side, please refer to the user manual of inverter or combiner box.

Power on the System

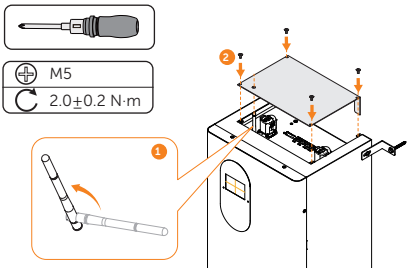
Before powering on the system:

- Check whether the device is installed correctly and securely;
- All cables are connected correctly and securely;
- All unconnected port are covered;
- The installation space is proper, and the installation environment is clean and tidy.

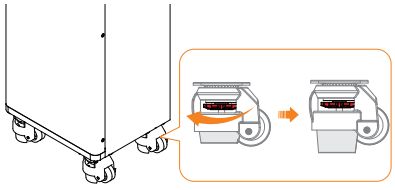


	Initial power on / black start	Subsequent power on
Press **POWER** button	5 s	1 s
Check **Status** light	Change from flashing yellow to flashing / solid green	Change from solid yellow to solid green

Note!
1 Unscrew and remove the top cover before subsequent power on or power off.



2



Lock the wheels to prevent the battery from moving.

3

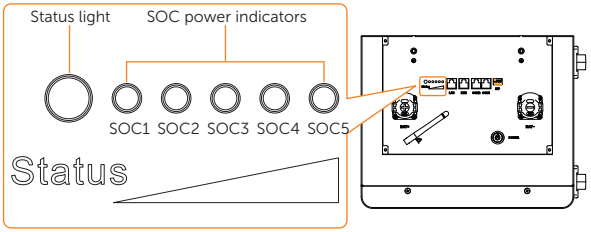
Power off the System

Press and hold the **POWER** button for 3 s to power off the device. The **Status** indicator will turns from solid yellow to off, and all SOC power indicators will be off.

WARNING!

- Shut down the inverter before powering off the battery.
- Wear personal protective equipment (PPE) and begin servicing the battery five minutes after power off.

LED Indicators



Description	Status indicator		SOC indicator	
Startup		Green quick flashing		Solid yellow
Shutdown		Solid yellow to off		Solid yellow
Standby		Solid green		Solid yellow
Charging		Green quick flashing		Yellow quick flashing
Discharging		Green quick flashing		Solid yellow
Fault		Red slow flashing		Solid yellow

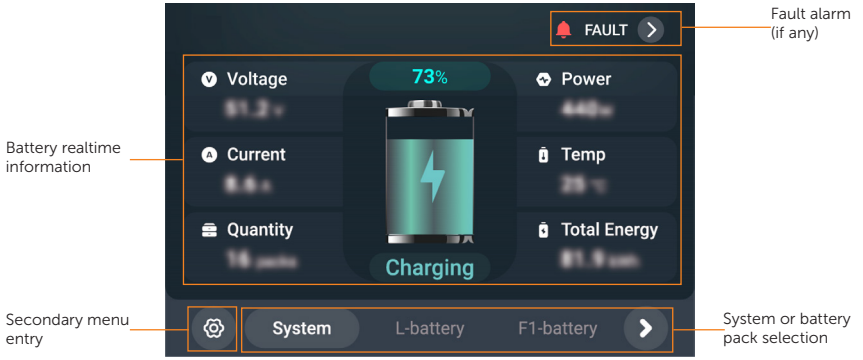
- SOC power indicators information during charging

SOC value	SOC1	SOC2	SOC3	SOC4	SOC5
SOC≥80%					
SOC≥60%					
SOC≥40%					
SOC≥20%					
SOC>0%					
SOC=0%					

- SOC power indicators information during discharging

SOC value	SOC1	SOC2	SOC3	SOC4	SOC5
SOC≥80%					
SOC≥60%					
SOC≥40%					
SOC≥20%					
SOC>0%					
SOC=0%					

LCD Panel



* The default user password is **0000**. Please reset the default user password, and we recommend you to reset your password regularly.
* For more details, please refer to the user manual.

SolaXCloud Download



Scan the QR code to download SolaXCloud App. Follow the tutorial or online documents on the SolaXCloud App to complete the configuration.

Warranty Registration

Please visit the website: https://www.solaxcloud.com/user-center/ to complete the warranty registration. For more detailed warranty terms, please visit SolaX official website: www.solaxpower.com.

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