



## Rechargeable LV Battery Quick Installation Guide

Elios Litio5.12

Ver 1.0

# HISTORY

Date	Revision	Description	Owner
2025-07-21	V1.0	Initial Version	TangXX

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# 1 Detailed Specifications

## 1.1 Product Parameters

Item Name	Specification	Remark
Rated Capacity	100 Ah	
Rated Voltage	51.2 V	
Rated Current	0.5C, 50 A	
Working Voltage Range	44.8V ~ 57.6V	
Rated Energy	5.12 kWh	
Max. Parallel Quantity	Max. 32 Sets In Parallel, 81.92 kWh	
Rated Charging Current	0.5C, 50 A	Option: 0.6C,60A
Max. Charging Continuous Current	0.5C, 50 A	Option: 0.6C,60A
Rated Discharge Current	0.5C, 50 A	Option: 1C,100A
Max. Discharge Continuous Current	0.5C, 50 A	Option: 1C,100A
Battery Max. Charge/Discharge Power	2.5 kW/5.12 kW	Option: 3KW/5KW
Peak Discharge Current / Power	105 A/5,37 kW, 1 min	
Available SOC Range	0% ~ 100%	
SOC Transportation Range	50%	
Dimensions [W*D*H]	Width: 440 (±5) mm/17.32 in Depth: 530 (±5) mm/20.87 in Height: 132 (±5) mm/5.2 in	
Weight	~44.5 kg	
Operating Temperature <sup>1</sup>	Charging Temperature: 0°C~55°C Discharge Temperature: -20°C~55°C	With Heating Function : Charging Temperature: -10°C~55°C Discharge Temperature: -20°C~55°C
Storage Temperature <sup>2</sup>	-20°C ~ 55 °C	
Working Humidity	<95% RH (non-condensing)	
Altitude <sup>3</sup>	≤2000 m/78.74 inch	
Communication	CAN, RS485, Dry Contact, WiFi	WiFi Stick Option
Certifications	UN38.3/UL1973/ UL9540A	0.5C/80%DOD/80%SOH/1 cycle per day
Designed Cycle Life (25°C ±2°C)	6000 Cycles	
IP Rating	IP20	
Cooling	Natural Cooling	
Heating Power	205 W	Option
Fire protection	YES	
Emergency stop function	YES	External wiring required
Environment Protection Standard	RoHS	

1 Recommended operating temperature: 10 ~ 30°C.

2 Recommended Storage temperature: 10 ~ 30°C.

3 Recommended working height is less than 2000 m/78.74 inch, and the max. working height is 3000 m/118.1 inch.

## 1.2 Product identity definition

Figure 1-1 Battery Pack nameplate



## 2 Preface

### About This Manual

This manual describes the installation, electrical connection, commissioning, Maintenance of the Elios Litio5.12 Battery System. Please first read the manual and related documents carefully before using the product and store it in a place where installation, operation and maintenance personnel can access it at any time. The illustration in this user manual is for reference only. This user manual is subject to change without prior notice. (Specific please in kind prevail.)

### Target Group

Elios Litio5.12 Battery System must be installed by professional electrical engineers who have obtained relevant qualifications.

### Scope

This manual is applicable to the following Energy storage system:

- Elios Litio5.12

### Conventions

The following safety instructions and general information are used within this user manual.

 DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
 CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
 NOTICE	Indicates a situation which, if not avoided, can result in property damage.
 NOTE	Information that is important for a specific topic or goal, however not related to safety.

### 3 Safety

#### 3.1 Important safety instructions

The product has been designed and tested strictly according to the international safety requirements. As with all electrical or electronic devices, there are residual risks despite careful construction. To prevent personal injury and property damage and to ensure long-term operation of the product, read this section carefully and observe all safety information at all times.

 <p><b>DANGER</b></p>	<p>Danger to life due to electric shock where surge protection is not used!</p> <p>If there is no surge protection, a voltage surge can be conducted into the building and to other connected devices in the same system through power cables, network cables or other types of cable. Touching live parts and cables may result in death or lethal injury due to electric shock.</p> <ul style="list-style-type: none"> <li>• Ensure all devices in the same system and the inverter are integrated within existing surge protection systems/devices.</li> <li>• Refer to local installation regulations to determine the requirements for the installation of surge protection devices.</li> </ul>
 <p><b>WARNING</b></p>	<p>Danger to life due to electric shock from destruction of measurement devices due to overvoltage!</p> <p>Overvoltage can damage a measurement device and result in voltage being present in the enclosure of the measurement device. Touching the live enclosure of the measuring device can result in death or lethal injuries due to electric shock.</p> <ul style="list-style-type: none"> <li>• Only use measuring devices with a higher voltage range than the system battery voltage.</li> </ul>
 <p><b>CAUTION</b></p>	<p>Risk of injury due to weight of product!</p> <p>Injuries may result if the product is lifted incorrectly or dropped while being transported or mounted.</p> <ul style="list-style-type: none"> <li>• Lift and transport the product carefully.</li> <li>• Wear suitable personal protective equipment, in accordance with local regulations, when working on the product.</li> </ul>
 <p><b>NOTICE</b></p>	<p>Damage to the battery system due to electrostatic discharge!</p> <p>Internal components of the battery system can be irreparably damaged by electrostatic discharge.</p> <ul style="list-style-type: none"> <li>• Ground yourself before touching any component.</li> </ul>

## 3.2 Installation requirements

Before installing, operating, and maintaining the device, the personnel must be trained to understand all safety precautions and correct operation methods.

- Only qualified and trained personnel are allowed to install, operate, and maintain devices.
- Only qualified professionals are allowed to remove safety facilities and repair equipment.
- The product must be installed and used in accordance with the specifications described in this manual (refer to "Installation" and "Technical Specifications"). Otherwise, the product may be faulty, and the resulting abnormal function or component damage is not covered by the product quality guarantee

## 3.3 Grounding requirement

The following applies only to devices that need to be grounded (except energy storage units).

- When installing devices, ground them. When removing the device, remove the ground cable at the end.
- Do not damage the ground conductor.
- Do not operate the device without a ground conductor installed. Before operating the device, check the electrical connections of the device to ensure that the device is reliably grounded.

## 3.4 Personal safety

- Do not operate devices or cables during thunderstorms.
- Before opening a device, wear ESD clothes, ESD gloves, and an ESD wrist strap. Remove conductive objects such as jewelry and watches to avoid electric shocks or burns.
- If there is a fire, evacuate the building or equipment area and press the fire alarm bell, or call the fire alarm number. Under no circumstances is it permitted to re-enter a burning building.
- Do not turn on the switch before the device installation is complete.

## 3.5 Equipment security

- Before operation, the device should be securely fixed to the floor or other stable objects, such as walls or mounting racks.
- Do not block vents when the system is running.
- Before powering on the device, ensure that screws inside the device are secured to prevent them from falling off during running.
- After installing the device, clear the empty packing materials from the device area.
- Replace unclear hazard signs promptly.
- In any case, do not change the structure of the equipment, installation sequence, etc., without the permission of the manufacturer.
- Do not use water to clean electrical components inside or outside the cabinet under any circumstances.
- Do not drill holes directly into the cabinet.

### 3.6 Symbols on the label

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Beware of a danger zone

This symbol indicates that the product must be additionally grounded if additional grounding or equipotential bonding is required at the installation site.

---



Beware of high voltage and operating current!

The product operates at a high voltage and current. Work on the product must only be carried out by skilled and authorized personnel.

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WEEE Designation

Do not dispose of the product together with household waste. Dispose the product in accordance with local disposal regulations for electronic waste.

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The battery is recyclable

The battery can be recycled by a professional recycling organization, please refer to the relevant local regulations.

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Observe the documentation

Read and understand all documentation supplied with the product.

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ROHS marking

The EU material and process standards for electrical and electronic products make them more conducive to human health and environmental protection.

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TUV marking

The product complies with the requirements of the applicable UL Directive.

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CE marking

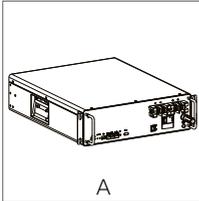
This product complies with CE certification in the United States.

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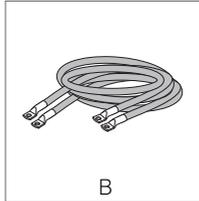
## 4 Unpacking and storage

### 4.1 Scope of delivery

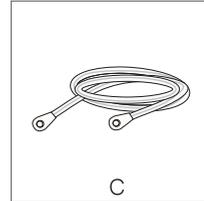
Check the scope of delivery for completeness and any visible external damage. Contact your supplier if the package is damaged upon delivery or is incomplete or damage.



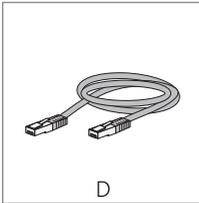
A



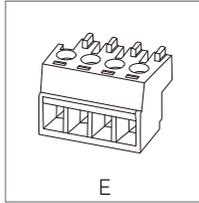
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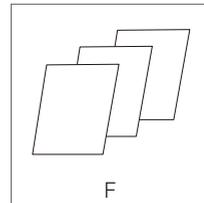
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D



E



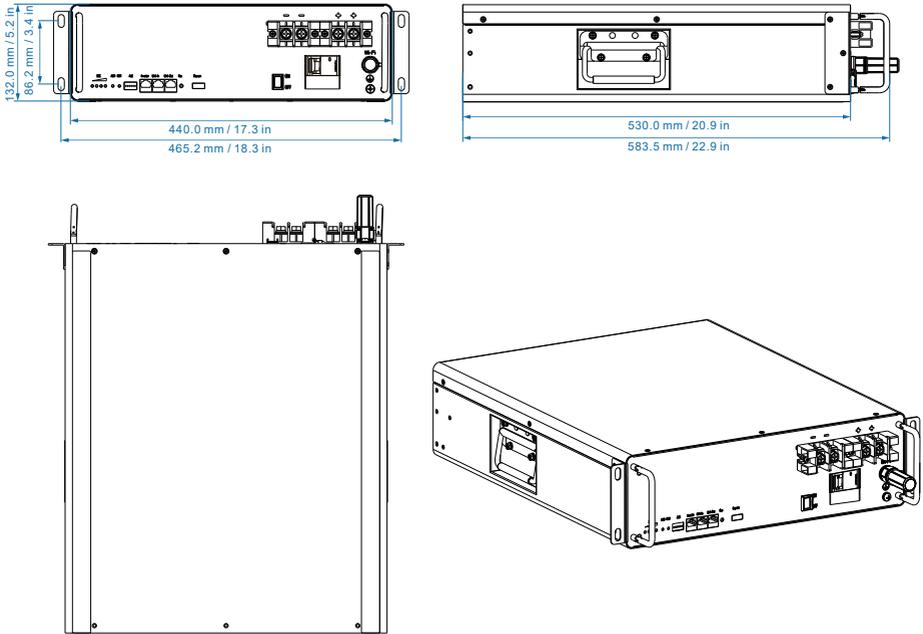
F

Object	Item Name	Details	Quantity	Notes
A	Battery	440x530x130 mm 17.3x20.9x5.2 in	1 PCS	
B	Output Cable	Positive: orange plug, 25 mm <sup>2</sup> / 4 AWG, L: 0.8 m to, Bare wires on the inverter side. Negative: black plug, 25 mm <sup>2</sup> / 4 AWG, L: 0.8 m to, SC25-8 on the inverter side.	1 SET	Continuous current capacity: 100A Terminal adapts to M8 screws
C	Grounding Cable	Ground cable yellow & green/L:1 m / double OT M6	1 PCS	
D	Communication cable	Standard network cable black/L:1.5 m / Double RJ45 Plug	1 PCS	
E	4 pin Dry contact plug		1 PCS	
F	Manual/shipping list /shipping report		3 PCS	

## 5 Product Overview

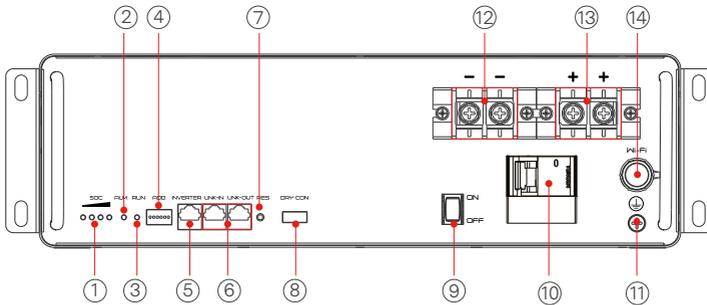
### 5.1 Dimensions

Elios Lítico5.12 dimensions are presented in Figure 2. It is designed for 19-inch cabinets.



Elios Lítico5.12 Dimensions (mm / in)

## 5.2 Interfaces and functions



Number	Name	Details	Notes
1	SOC LED x4		
2	Alarm LED		
3	RUN LED		
4	Dialer		
5	Communication port	RJ45	CAN to PCS, RS485 Internal Connection
6	Communication port *2	RJ45	RS485 Internal Connection
7	Reset		
8	Dry Contact		
9	Power On/Off Switch		
10	125A DC Breaker		
11	GND	M6	Yellow-Green, 10 AWG
12	Port Negative x2		Black Cable: 4AWG or 25mm2 with M6
13	Port Positive x2		Red Cable: 4AWG or 25mm2 with M6
14	WiFi Socket		Function (Option)

### • RJ45 Port Pin Definition

Item	View	Description	1	2	3	4	5	6	7	8
5		INVERTER	-	RS485-A	RS485-B	CAN-H	CAN-L	GND	-	-
6		LINK IN	-	BMS-RS485-A	BMS-RS485-B	DI+	DI-	NC	BMS-CAN-H	BMS-CAN-L
		LINK OUT	-	BMS-RS485-A	BMS-RS485-B	DO+	DO-	NC	BMS-CAN-H	BMS-CAN-L

## 6 Mounting

### 6.1 Installation environment requirements

1. Ensure that the equipment is installed in a dry and well-ventilated environment.
2. The installation position must be far away from fire sources.
3. The installation position must be far away from water sources such as taps, sewer pipes, and sprinklers to prevent water seepage.
4. Do not expose the equipment to flammable or explosive gas or smoke.
5. Humidity: 5-95%RH (non-condensing); Operating temperature: -20°C~+55°C.



Max 55°C



Min -20°C

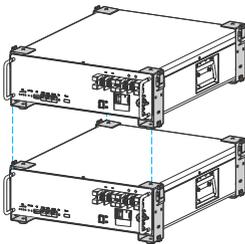


RH: 5-95%

### 6.2 Multiple installation methods

#### Stack installation

Stack the PACKs one by one from bottom to top.

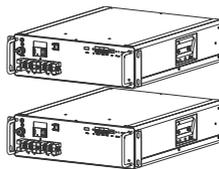
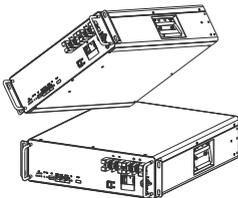


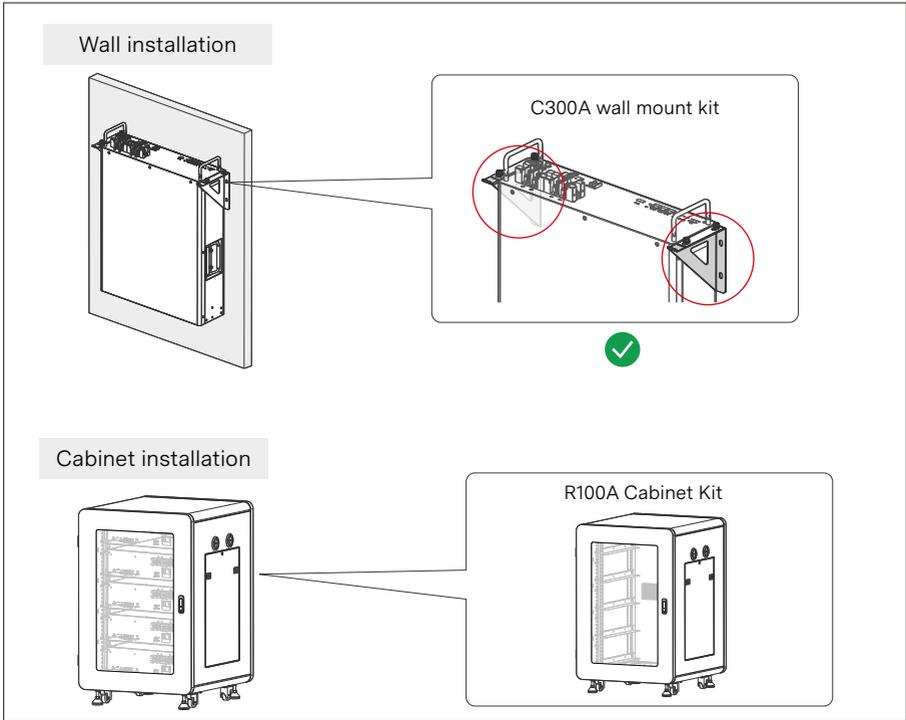
#### H100 stacking kit



Do not tilt the PACK to one side during installation.

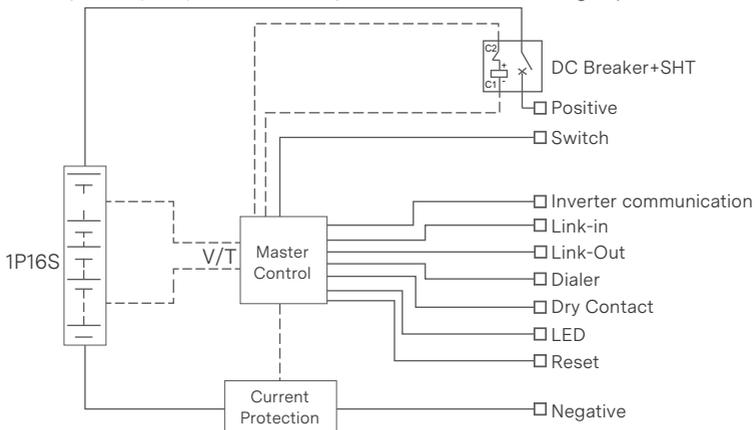
Do not install the PACK upside down.





### 6.3 System Introduction

Elios Litio5.12 Energy Storage System is consisted of 16 pcs of 100 Ah LFP cell originated. The overall system also provides standard communication port, i.e. CAN and RS485, to monitor the working status and communicate with upper machine as well as the Power Conversion System (PCS) in front. The system schematic drawing is presented in Figure .



## 6.4 Connector Definition

Instructions for installing the battery must be followed (if in doubt refer to your retailer or Volts support).

### 6.3.1 Definition of Internal Sampling Connector CON1

PIN	Wire No.	Signal	Wire size (mm <sup>2</sup> )	Remarks
CON1-1	T1+	Signal	0.3	Temp. #1+
CON1-2	T1-	Signal	0.3	Temp. #1-
CON1-3	B0	Signal	0.3	Cell #1-
CON1-4	B1+	Signal	0.3	Cell #1+
CON1-5	B2+	Signal	0.3	Cell #2+
CON1-6	B3+	Signal	0.3	Cell #3+
CON1-7	B4+	Signal	0.3	Cell #4+

### 6.4.2 Definition of Internal Sampling Connector CON2

PIN	Wire No.	Signal	Wire size (mm <sup>2</sup> )	Remarks
CON2-1	T2+	Signal	0.3	Temp. #2+
CON2-2	T2-	Signal	0.3	Temp. #2-
CON2-3	B5+	Signal	0.3	Cell #5+
CON2-4	B6+	Signal	0.3	Cell #6+
CON2-5	B7+	Signal	0.3	Cell #7+
CON2-6	B8+	Signal	0.3	Cell #8+

### 6.4.3 Definition of Internal Sampling Connector CON3

PIN	Wire No.	Signal	Wire size (mm <sup>2</sup> )	Remarks
CON3-1	T3-	Signal	0.3	Temp. #3-
CON3-2	T3+	Signal	0.3	Temp. #3+
CON3-3	NC	NC	NC	NC
CON3-4	B9+	Signal	0.3	Cell #9+
CON3-5	B10+	Signal	0.3	Cell #10+
CON3-6	B11+	Signal	0.3	Cell #11+
CON3-7	B12+	Signal	0.3	Cell #12+

### 6.4.4 Definition of Internal Sampling Connector CON4

PIN	Wire No.	Signal	Wire size (mm <sup>2</sup> )	Remarks
CON4-1	T4-	Signal	0.3	Temp. #4-
CON4-2	T4+	Signal	0.3	Temp. #4+
CON4-3	B13+	Signal	0.3	Cell #13+
CON4-4	B14+	Signal	0.3	Cell #14+
CON4-5	B15+	Signal	0.3	Cell #15+
CON4-6	B16+	Signal	0.3	Cell #16+

## 6.5 DC Cable Requirements

Some main features of this product are:

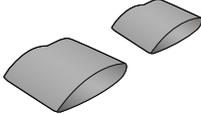
Size	Outer Diameter	Max. Voltage	Max. Current
21-33 mm <sup>2</sup>	10-12 mm	1000 V	100 A

	<b>CAUTION</b>	DC cable must be a multicore wire.
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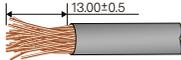
## 6.6 DC Cable

	<b>DANGER</b>	<ul style="list-style-type: none"> <li>• Turn off system before doing electrical connection</li> <li>• Ensure all the cables are in electrical safe condition</li> </ul>
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### 6.5.1 Material List

 <p>SC35-6/35-8 Terminal</p>	 <p>Heat-shrinkable Tubing (Red/Black)</p>	 <p>25mm<sup>2</sup> DC cabl</p>
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### 6.6.2 Steps

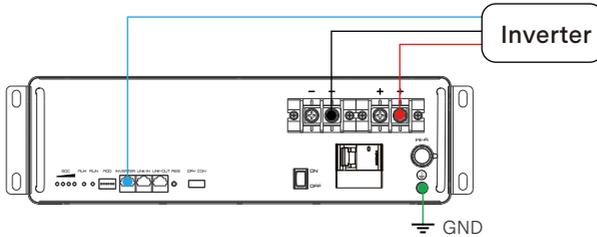
Procedure	Schematic picture
1. Swipe outer isolation layer of DC cable.	
2. Put wire Tail-Hood.	
3. The red is used for the positive, and the black is for negative; The end of the cable is bunched at the terminal using a wire clam.	
4. Use isolation cap for unused DC plug.	
5. Power cable ready for using.	

## 6.7 DC Cable Connection

- Positive
- Negative
- GND
- Communication

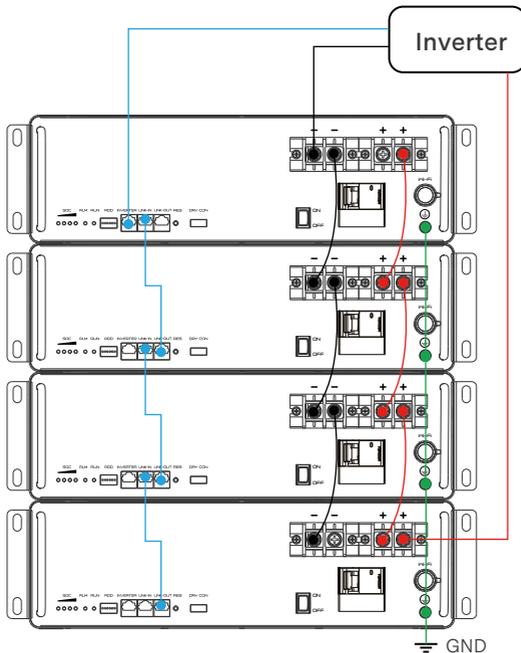
### 6.7.1 Single Unit (Output 100A / 5KW)

Single Unit Connection

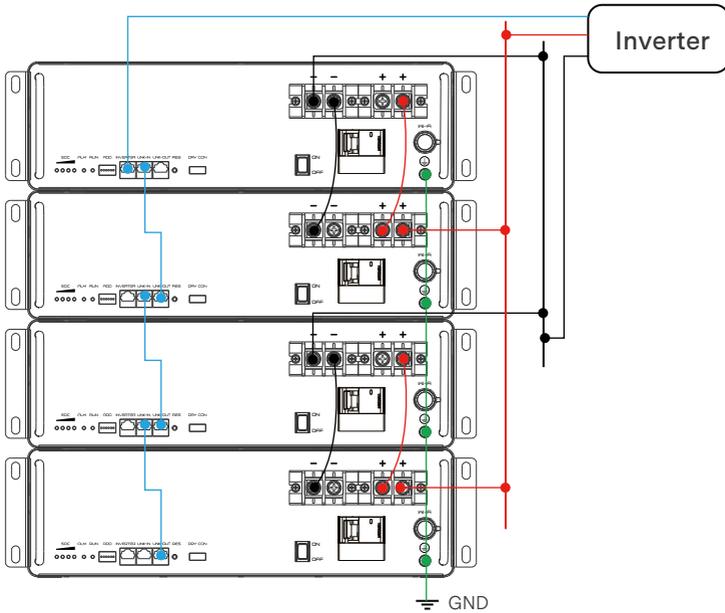


### 6.7.2 Multi-Units in Parallel (4 sets as an example)

Multi-Units Connection-1 (Output 100A / 5KW Based on wiring method)  
 ( Battery  $\Delta V$  should be less than 3V at first Parallel installation )



Multi-Units Connection-2 (Output 200A / 10KW Based on wiring method)  
 ( Battery  $\Delta V$  should be less than 3V at first Parallel installation )



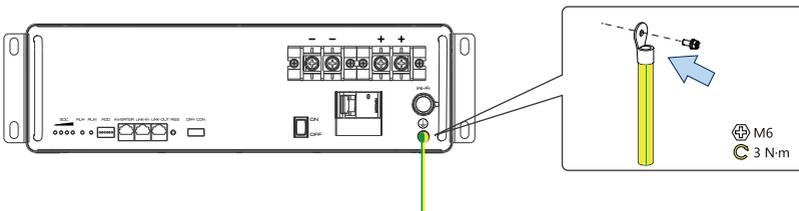
Master Pack and Slave Pack Elios Litio5.12 can be used as single unit as well as multi-units (in parallel) mode. The customer must inform supplier if multi-units mode is required. The Master Pack can be used individually, but Slave Pack cannot be used individually.



**CAUTION**

Parallel connection is not supported while the system is powered on. You need to power off the battery, perform the parallel connection, and then power it on again.

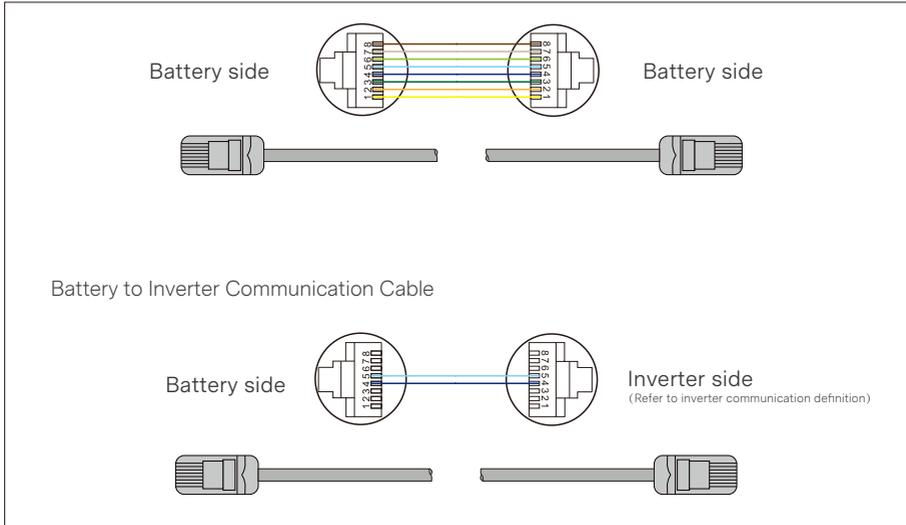
### 6.8 Ground Cable Connection



### 6.9 Communication Cable

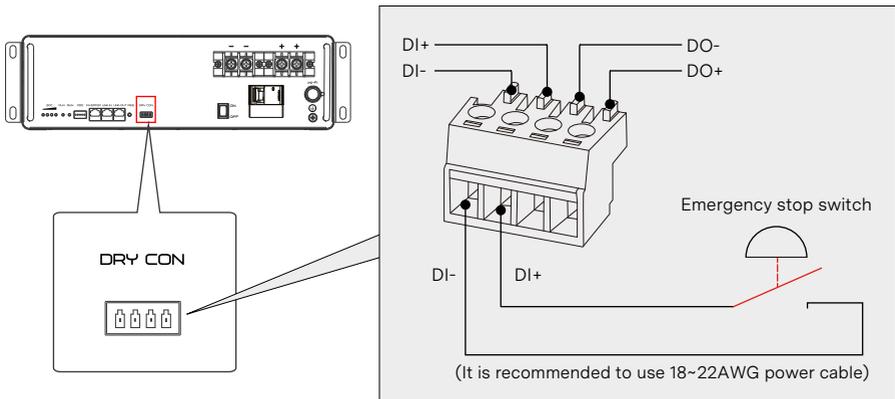
Battery to Battery Communication Cable.

Pin definition as below, alternatively a standard straight CAT5 Ethernet cable can be used.



During installation, please turn off the battery power switch and check whether the power is off. The cable from the circuit breaker to the inverter is provided by the installation personnel (please refer to the Product Packaging List for cable specifications).

### 6.10 Dry contact protection



Please note the following precautions to ensure the best long-term operation of Elios battery systems with multiple batteries in parallel. This document will refer to such a group of many parallel batteries as a battery bank.

Note: Make sure these requirements are met before powering on the batteries in parallel.

### Maximum Voltage Difference between Batteries

Elios batteries are quite unique in that they have a dedicated integrated charge circuit so that after initial parallel connection, batteries with a lower voltage can be safely charged automatically from those with a higher voltage. However, we strongly recommend that all batteries in the battery bank are within 3.0 V of each other regardless to cover all corner cases. This means that the voltage of the battery with the highest voltage in the battery bank is no more than 3.0 V higher than the battery with the lowest voltage in the battery bank before initial connection. An example for a battery bank of 4 batteries:

Battery number	1	2	3	4
Voltage before first connection	51.2 V	52.6 V	50.8 V	50.1 V

In this example the highest voltage is from battery 2, with 52.6 V. The lowest voltage is from battery 4 with 50.1 V. The difference between the highest and lowest is  $52.6 \text{ V} - 50.1 \text{ V} = 2.5 \text{ V}$ . As 2.5 V is less than the recommended maximum difference of 3 V, these batteries may be connected in parallel to each other. If 3 V difference are exceeded, please charge the batteries with the lowest voltages, or discharge the batteries with the highest voltages until the difference between the highest and lowest voltage battery in the battery bank no longer exceeds 3 V.

### Maximum Battery Bank Discharge Current

In any system with many batteries in parallel, charging and discharging them with the same current in all conditions becomes a challenge. Charging tends to be easier, because charge current can be controlled via communication and the hybrid inverter/charger. Discharging is determined by the inverter and its load and in case there is no alternative energy source such as the public grid, the load can only be either on or off and not adjusted to fit any discharge limits set by the battery. For this reason, we strongly recommend operating inverters with a total output power no larger than shown in the following table:

Battery quantity in parallel	16	18	20 ~ 32
Rated power output	40 kW	40 kW	40 kW
Maximum power output	40 kW	45 kW	50 kW

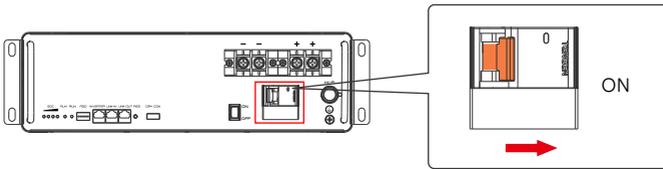
This ensures that even in corner cases where only a small number of batteries are discharging, no damage is done to the BMS. It also prevents the BMS from entirely disabling discharge (and cutting off the load) when sufficient energy remains in the battery bank.

## 7 Power ON and OFF

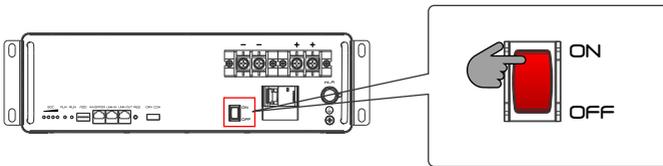
 <p><b>NOTICE</b></p>	<p>Failure to turn on all circuit breakers between the battery and inverter before tuning on the battery power switch will cause the pre-charge/soft-start functionality not to function. This would cause very high currents to flow between the inverter and battery for a short duration, potentially damaging the battery, inverter or wiring.</p>
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### 7.1 System Power ON

- Installation (including DC cable, communication wire connection and dialer switch) is properly down.  
Turn on breaker.



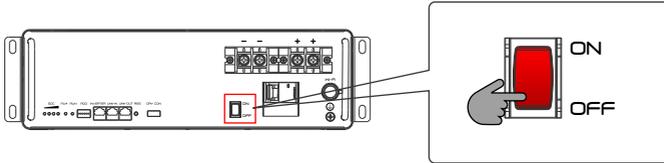
Press Power Switch button, green LED should be twinkling and then turn into function mode. (system status can be red from LED signal, as shown below)



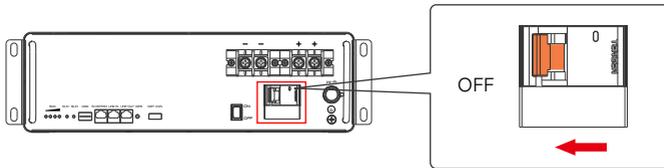
## 7.2 System Power OFF

Attention: It must be confirmed that the system is off before taking off DC cables.

Press Power Switch button , Green LED should be twinkling and then turn into stop mode;



Turn off breaker.



### 7.2.1 Sleep and Wake-up Function

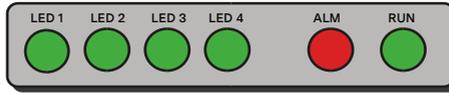
Number	Sleep Condition	Wake-up Condition	Remarks
1	Forced sleep by upper computer	Reset button	
2	Forced sleep by soft switch	Soft switch	Only those equipped with soft switch can pass the call Wake up
3	Total Voltage is lower than 48V or monomer is lower than 2.8V, and continuous No charge and discharge current for 4 hours, no communication goes to sleep	Reset button Soft switch Communication Charging	Only those equipped with soft switch can pass the call Wake up

### 7.2.2 Buzzer Functio

- 0.25s per 1s in case of fault
- 0.25s per 2s during protection

### 7.2.3 System Status LEDs

There are 6 LED indicators, 4 green LEDs give the status of SoC (state-of-charge), 1 red Alarm LED and 1 green Running Status LED (indicating charging, discharging etc.).



STATUS	NORMAL/ALARM/ PROTECTION	RUN	ALM	SoC			NOTES
		●	●	●	●	●	
Shutdown/Sleep		Off	Off	Off	Off	Off	
Stand-by	Normal	On	Off	Off	Off	Off	
Charge	Normal	Based on battery indicator	Off	Based on battery indicator (Each LED indicates 25% SOC) Flashing 2			
Discharge	Normal	Based on battery indicator	Off	Based on battery indicator (Each LED indicates 25% SOC) Flashing 3			
BMS Fault	Short/Mos Error	Off	On	Off			
	Communication Error	Off	Flashing 2	Off			
	Other Error (Over-Temp/ Current/Voltage Protection)	Off	Flashing 3	Off			
BOOT/FW Update	-	Flashing 1	Off	Off			
Self-Checking	-	Flashing 2	Flashing 2	Off			

### 7.2.4 LED Flashing Status

Status	On	Off
Flashing 1	0.1s	0.1s
Flashing 2	0.5s	0.5s
Flashing 3	0.5s	1.5s

### 7.2.5 SoC Indicator

SoC	LED			
	●	●	●	●
	LED1	LED2	LED3	LED4
0~25%	On	Off	Off	Off
25%-50%	On	On	Off	Off
50%-75%	On	On	On	Off
75%~100%	On	On	On	On

### 7.3 Maintenance

- The inspection, maintenance, repair and connection of the battery system shall be completed by professionals or qualified trainers..
- During the assembly of the Battery system, attention shall be paid not to touch the positive and negative terminals of the Battery system by hand or other metal objects at the same time, so as to avoid electric shock or short circuit.
- The Battery system shall be fixed firmly and reliably, and the Battery system shall not work in an inverted state.
- The product layout of the system must consider the convenient disassembly and easy wiring of the power system. In particular, rainwater, ponding or moisture shall be prevented from entering the battery compartment.
- The positive and negative output terminals of the Battery system are respectively marked with positive and negative signs, which shall be distinguished during connection.
- The direction of DC cable shall be reasonable, the connection shall be firm and in place, and attention shall be paid to safety during wiring.
- The red positive harness is connected to the red positive connector, and the black negative harness is connected to the black negative connector. The positive and negative cannot be reversed. The communication harness is connected to the left communication socket. Pay attention to the correspondence of communication pins.
- After the installation is correct, press the button switch. After a few seconds, the green light should be on and flash, and the system is normal. The green light is always on during normal operation.
- Check the Battery system before use, as shown in the table below :

Content	Description	Standard	Operation method
Cell voltage	Measure cell voltage	The measured voltage shall be greater than 2.5V	When the voltage of single battery is less than 2.5V, please contact the manufacturer
Battery system voltage	Measure the battery system voltage	The measured voltage shall be greater than 40V	When the voltage of the Battery system is less than 40V, please recharge or replace the battery
Battery connection	Check whether the single cells are correctly connected together	Each single cell must be correctly connected together	Before using the battery, ensure that each single cell is connected correctly. If the connection is found to be incorrect, please contact the manufacturer
Battery appearance	Check whether the single battery is broken, deformed or leaked	Avoid exceptions	In case of liquid leakage, replace the leaking battery if it is serious
	Check every possible damaged part	Avoid exceptions	Replace the damaged part
	Check the battery connections for rust	Avoid rust on jumper, connecting wire and end	Cleaning, rust prevention and repair
	Check whether the connectors are tight	Avoid loosening of nuts or screws	If loose, tighten

- The insulation resistance of the Battery system shall be checked before each use to prevent battery leakage.
- When the Battery system leaves the factory, its SOC is 50%.
- The charging method of the Battery system is recommended as follows:  
At the ambient temperature of  $23 \pm 2$  °C, discharge to the Battery system voltage N1 at 0.5c (50a) × 2.8V (44.8v) or any single battery voltage to 2.7V, leave it for 0.5h, and then charge it to the Battery system voltage N1 at 0.5c (50a) × When the voltage of 3.6V (57.6v) or any single battery reaches 3.65v, stop charging, leave it for 0.5h, and discharge to the Battery system voltage N1 at 0.5c (50a) × 2.8V (44.8v) or any single battery voltage to 2.7V. Then charge it and use it normally. Voltage and temperature control shall be carried out during charging. When the charging voltage of the Battery system is greater than N1 × Stop charging when the voltage of 3.6V or any single battery is greater than 3.7V or the surface temperature of the battery is greater than 60 °C. Other charging methods shall be negotiated by both parties.
- During the maintenance of battery pack and power management system, in order to ensure safety, it shall be carried out under the condition of external open circuit as far as possible; If it is necessary to require the maintenance operation of the Battery system under the condition of external access, it must be operated according to the relevant insulation requirements to avoid electric shock.

## 8 Transportation and Storage

### 8.1 Transportation

It is forbidden to expose the battery to serious vibration and shock during transportation.

### 8.2 Storage

If the system is not used, the system must be correctly stored. Otherwise, if there are any issues, Volts shall not be liable. Storage conditions are as follows:

- It should be stored in 60% SoC status.
- It should be stored at ventilation environment, Temp. < 35 °C, ROH <65%.
- It should be stored avoiding humid condition.
- It should be stored in place where they can be monitored by professionals.



#### NOTE

A proper inspection shall be conducted every 3 months, to ensure no over-discharge of the battery (SoC is long time less than 0%) occurs. At over-discharge status, the battery would behavior as:

1. The battery could not start-up when turning the power switch to the ON position;
2. The battery output voltage is less than 40V when turned on;
3. Indicators are off and battery can not communicate to the upper computer via RS485/USB converter.

Please contact the technical person where you purchase the battery from immediately once the above abnormal issues occur. And actions in terms of re-charging the battery (to the SoC 50%) is required before the field installation.

## 9 Recycling disposal

The batteries may only be disposed of in accordance with the disposal regulations for used batteries applicable at the time of disposal. Immediately decommission any damaged batteries and please contact your installer or sales partner first before disposal. Ensure that the battery is not subjected to moisture or direct sunlight. Ensure quick removal by your installer.

- Batteries, including rechargeable batteries, may not be disposed of in household waste. You are legally obligated to return used batteries.
- Used batteries may contain pollutants that can damage the environment or harm your health if they are not stored or disposed of properly
- Batteries also contain important raw materials such as iron, zinc, manganese, copper, cobalt or nickel and can be recycled.

Do not dispose of batteries in household waste!



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