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This Quick installation guide provides a brief overview of a basic stand-alone installation of the MLI Ultra 12/1250 & 24/1250. Always read the complete **user and installation manual** in parallel with this quick start guide. Scan the QR code to download the manual.



2



All electrical systems (DC and AC) must be disconnected from any power source during the entire installation! Use isolated tools!

Always avoid short circuits, too deep discharges, and too high charge currents.

Always handle with care and lift the battery at the handle.

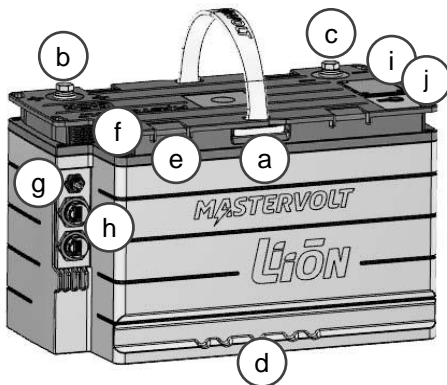
Never open or dismantle the battery and do not short circuit.

The Material Safety Data Sheet for Mastervolt Lithium-Ion batteries is available on www.mastervolt.com.

Read the safety instructions (chapter 1 of the user and installation manual).

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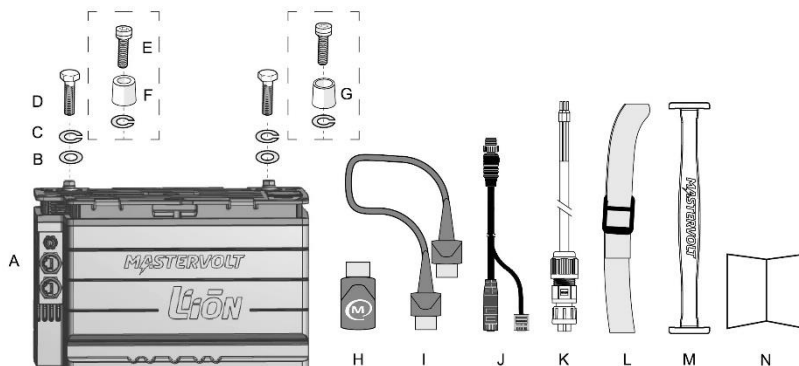
Open the box. Before taking the battery out, take out the handle and insert it into the recess on the back and front side of the battery (item a in drawing) to secure it. Now take out the battery.



- a) Provision for removable handle.
- b) M8 positive terminal
- c) M8 negative terminal
- d) Hold down edges group 31, fit battery group size 49
- e) Attachment strap support (for stationary applications only)
- f) Protective vent; maintain adequate ventilation around this opening. Do not touch the membrane!
- g) Auxiliary connector
- h) MasterBus/CZone connectors
- i) Status LEDs and DIP switch cover
- j) Battery switch-button (*safety disconnect*)

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Check the contents of the delivery. Contact your supplier if one of the items is missing. Do not use the MLI Ultra if it is damaged.



- A. 1x MLI Ultra battery
- B. 2x plain washer
- C. 2x spring washer
- D. 2x battery terminal M8 bolt
- E. 2x battery terminal M8 Allen bolt
- F. 1x automotive battery pole positive (thick)
- G. 1x automotive battery pole negative (thin)
- H. 1x MasterBus terminator
- I. 1x MasterBus cable (1m)
- J. 1x CZone Drop cable (1m)
- K. 1x 6p auxiliary cable (2m)
- L. 2x Mounting straps
- M. 1x Handle
- N. 1x Quick installation manual

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Secure the battery in place. Choose the option that best fits the position.



Mounting straps
(stationary applications only)



Hold-downs on long side (group 49)



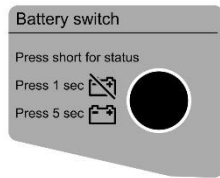
Frame or tray

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Make sure that the charger is Lithium Ion compatible and meets the MLI Ultra's charge parameters.

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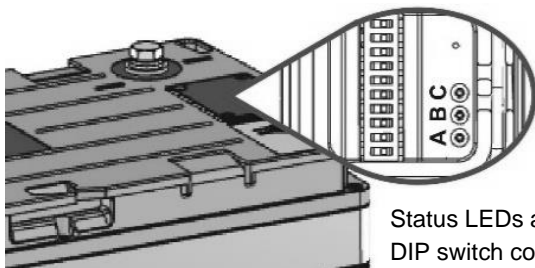
Out of the box, the battery is on (switch is closed). Press the Battery switch-button to switch-off (*safety disconnect*).



Description of the Battery switch:

- Short press to make LED C show the status of the Battery switch.
 - Solid on for 1 minute: battery is on (switch is closed).
 - Blinking for 1 minute: battery is off (switch is open).
- Press for 1 second to switch-off. LED C will blink.
- Press for 5 seconds to switch-on. LED C will light up for 1 minute.

LED	Color	Name	Meaning
A	Red	Error	If this LED is on, a BMS error has occurred or cells are damaged. Check the installation and contact your supplier.
B	Yellow	Battery state	During normal operation the LED is off. 1 short blink SoC low. Charge the battery. ● ● ● 2 short blinks CZone network identification (during installation). ●● ●● ●● 3 short blinks Auto cluster configuration error. See the user and installation manual for details ●●● ●●● 4 short blinks Battery is executing a recovering procedure. ●●●● ●●●● Blinking slowly Battery is updating its firmware. — — —
C	Green	Battery switch state	When the Battery switch-button is pressed short, this LED indicates the status of the battery switch. - Solid on for 1 minute: battery is on (switch is closed). - Blinking for 1 minute: battery is off (switch is open).



Status LEDs and
DIP switch cover

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Due to the Interrupt Rating, use a T-fuse or an MRBF fuse. In our example we use an MRBF fuse.

Directly on the battery terminal (A),
mount an MRBF fuse holder (B).

Add the fuse (c).

Add the positive cable (D).

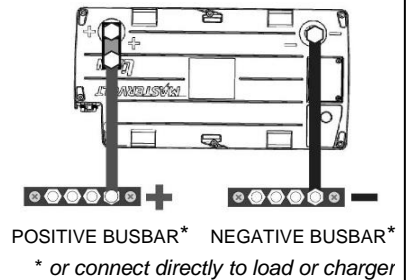
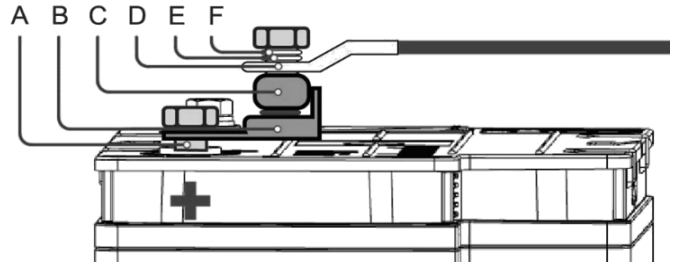
Add a flat washer (E).

Add a spring washer (F).

Tighten the bolt.

Connect the negative cable to the – terminal.

Recommended torques: 14.7 – 19.6 Nm/130 – 170 InLbs.



MLI Ultra	12/1250	24/1250
Recommended fuse	200 A	100 A
Recommended wire size	70 mm ² [AWG 2/0]	35mm ² [AWG 2]



Never mount a stud fuse directly on the battery terminal. Always use the isolated fuse holder! Otherwise the fuse will not work!

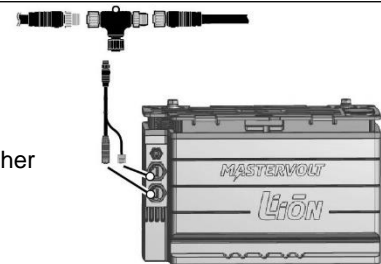
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Communication options:

A. No communication. Continue with the step 10.

B. CZone

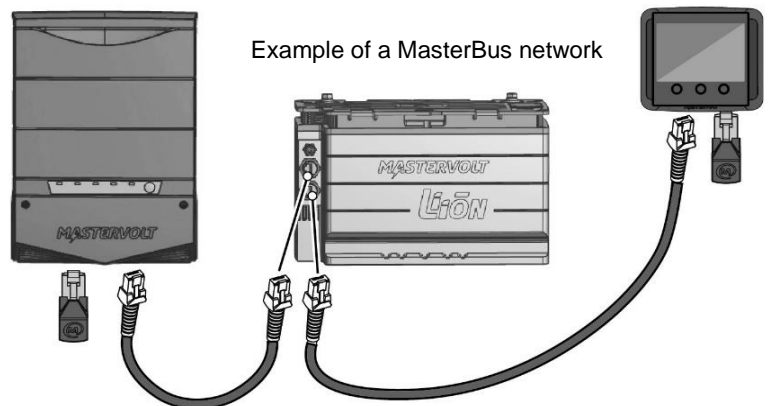
- Set DIP switches 1 and 2 to OFF.
- Use DIP switches 3 to 10 to set the dipswitch number used in a CZone network. At least one of DIP switches 3 to 10 must be ON.
- Connect the drop cable. On the battery side, plug the connectors into either of the communication ports.



Detail of a CZone network

C. MasterBus

- Keep DIP switch 1 ON.
- Option: set DIP switches 2 to 8 to match the required settings. See table "MASTERBUS DIP SWITCH SETTINGS". DIP switches 9 and 10 are not used in MasterBus.
- Plug the MasterBus cables (or MasterBus Terminator if required) into the communication ports.



Example of a MasterBus network

New out of the box, the MLI Ultra is suitable for use in a MasterBus network or as a stand-alone battery. Use the CZone Configuration Tool or MasterAdjust for advanced settings. See the user and installation manual for details.

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Press the Battery switch-button for 5 seconds to switch the battery on. LED C (green) will be solid on for one minute.

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Switch on some loads and verify that they are working. Switch off the loads, switch on the charger and verify (charger status) that the battery is being charged. The battery is now ready for operation.

MASTERBUS DIP SWITCH SETTINGS

DIP switch	1	2	3	4	5	6	7	8
CZone communication	0							
MasterBus communication	1							
MasterBus powering disabled		0						
MasterBus powering enabled		1						
Event-based 'stop charge' can be setup per charger			0					
Automatic 'stop charge' for ALL Mastervolt chargers			1					
<i>In a multiple unit configuration, one battery is the Primary unit, the others are called replica units.</i> <i>For complex configurations, keep DIP switches 4,5 and 6 of all units off and use MasterAdjust to modify the settings.</i>				0	0	0		
Stand-alone unit				0	0	1		
Replica unit				0	1	0		
Primary unit in a 12V system				0	1	1		
Primary unit in a 24V system				1	0	0		
Primary unit in a 36V system				1	0	1		
Primary unit in a 48V system								
<i>The Battery Management System controls the built-in battery switch. Including switching on again when conditions are safe.</i>							0	
Auto switch-on feature enabled							1	
Auto switch-on feature disabled								
<i>If the battery is switched-off, there will be no voltage at the poles and some (non-Mastervolt) chargers will not start charging.</i>								0
Battery detect feature disabled								1
Battery detect feature enabled								

See the user and installation manual for details.

SPECIFICATIONS

	MLI Ultra 12/1250	MLI Ultra 24/1250
Part number	66011250	66021250
Nominal capacity (Cn)	100 Ah	50 Ah
Nominal energy	1250 Wh	1250 Wh
Nominal voltage	12 V	24 V
Bulk/absorption (max charge) voltage	14.25 V	28.5 V
Float voltage (end of charge)	13.5 V	27.0 V
Recommended charge current	≤ 50A (0.5C)	≤ 25A (0.5C)
Max. continuous discharge current	200A (2C)*	100A (2C)
Peak discharge current (10 seconds)	500A (5C)	250A (5C)
Operating temperature	-20 to 50°C [-4 to 122°F] Charging at temperatures below -5°C / 23°F may result in battery not accepting charge current. If a charger is connected and the temperature of the MLI Ultra is below 0°C [32°F], then the internal heater is turned on until 5°C [41°F] is reached or the charger is disconnected. It takes about one hour to get from -20°C [-4°F] to above 0°C [32°F]. Temperatures below 5°C / 41°F and above 25°C / 77°F may affect lifetime and cycle life.	

* Due to thermal protection, this high discharge current can be used for 3 minutes at or above an ambient temperature of 25°C [77°F].



Do not dispose of with normal household waste! Act according to local rules.