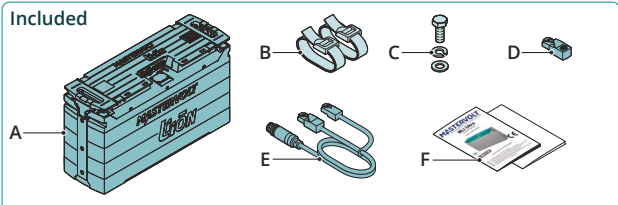
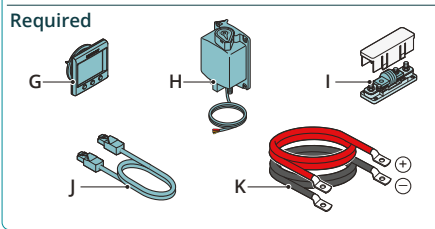


Unpacking

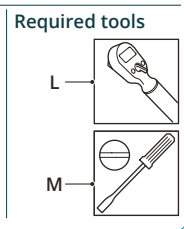
Included



Required



Required tools



Included parts	
A	MLI Ultra
B	Mounting straps
C	2x M8 Bolt, spring washer and washer
D	MasterBus terminator
E	CZone drop cable
F	User and installation manual

Required parts and tools	
G	Display
H	Safety relay
I	T Fuse holder and Fuse
J	MasterBus cable (in case of a MasterBus network)
K	DC main wiring (+ and-)
L	Hexagon socket wrench (13mm / 1/2")
M	Flat screwdriver (2mm / 1/16")

Refer to the manual



The quick start guide contains a brief overview of the device. Please refer to the manual for more detailed instructions. Scan the QR code to download the manual.




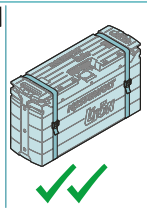
Important safety instructions

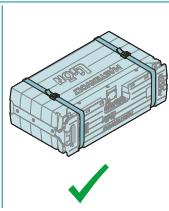
- Always install an external safety relay!
- Do not short-circuit the device.
- Only use a Lithium compatible charger.
- Observe the positive (+) and negative (-) marks on the device.
- Use DC cables with an appropriate size.
- Do not damage, open or drop the device.
- Do not expose the device to heat or fire.
- When you transport the device, make sure that the device is upright and in its original package or equivalent.
- If the device has a leakage, do not touch or swallow the released materials or inhale the released gases. If skin contact, eye contact or inhalation occurs, take the necessary first aid measures immediately. Refer to the material safety data sheet for Lithium-Ion batteries at www.mastervolt.com.

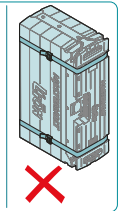
Location specifications

- Install the device:
- in a well ventilated room,
 - protected against rain, snow, water, vapor, moist and dust,
 - away from heat sources,
 - in upright position,
 - at least 1 cm away from another Lithium-Ion battery.
 - Secure the device with mounting straps or equivalent.



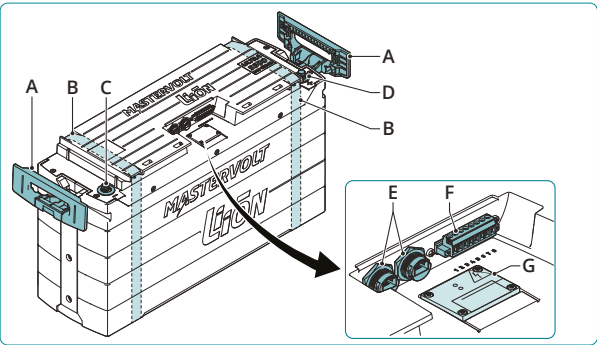






Description

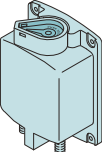

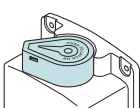
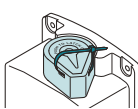
The device is a Lithium-Ion battery to operate heavy loads for an extended period of time. The device consists of a waterproof electronics box with Lithium-Iron Phosphate cells.



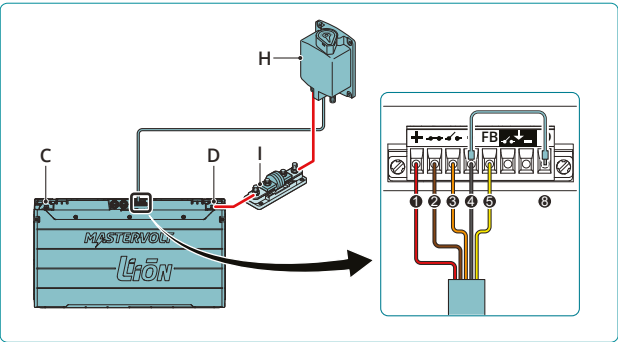
Main parts	
A	Handle
B	Position for Mounting strap
C	Negative battery terminal
D	Positive battery terminal
E	MasterBus / CZone connection
F	Safety relay connector
G	DIP switch cover and LED indicators

Safety relay

The use of a safety relay is mandatory. This example shows the blue sea systems 'ML RBS remote battery switch' with manual control.

Remote On	Remote Off	Lock off	Service lock
			
Connect the device to load and charging devices	Disconnect the device to load and charging devices	Prevent remote operation	Use a tie wrap to secure for servicing


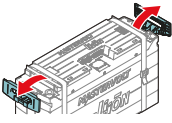
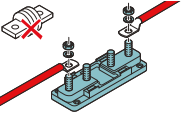
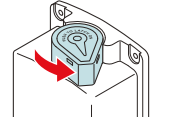
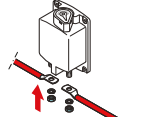
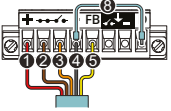
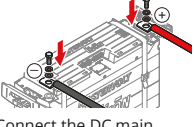
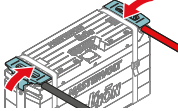
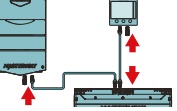

Note! Right out of the box, a jumper wire is set to pins 4 and 5 of the MLI Ultra's safety relay connector, as a reminder to install the relay. Connect the jumper wire to pins 4 and 8 and connect the safety relay to pins 1 to 5 (see drawing below). Two screws allow the connector block to be temporarily detached from the battery case to make it easier to connect the wires.



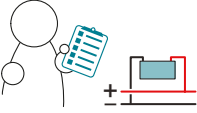
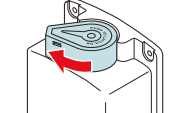
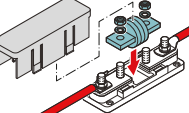

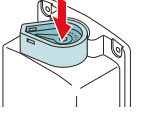



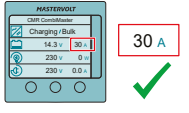

System parts	
C	Negative terminal
D	Positive terminal
H	Safety relay
I	T Fuse holder and Fuse

Safety relay connections	
1	Red
2	Brown
3	Orange
4	Black + one end of the jumper wire
5	Yellow
8	Other end of Jumper wire

Connecting a single MLI Ultra in a MasterBus network

<p>1</p>  <p>OFF OFF</p> <p>Switch off all loads and power sources.</p>	<p>2</p>  <p>Tilt the side handles.</p>	<p>3</p>  <p>Integrate the T-fuse holder in the + wire.</p>	<p>4</p>  <p>Set the safety relay to "Lock off".</p>	<p>5</p>  <p>Integrate the safety relay in the + wire.</p>
<p>6</p>  <p>Connect the safety relay connector block.</p>	<p>7</p>  <p>Connect the DC main wiring to the terminals.</p>	<p>8</p>  <p>Cover the terminals.</p>	<p>9</p>  <p>Connect network cabling.</p>	<p>10</p>  <p>Start commissioning.</p>

Commissioning

<p>11</p>  <p>Check all wiring and connections.</p>	<p>12</p>  <p>Set the safety relay to "remote off".</p>	<p>13</p>  <p>Install the T-fuse.</p>	<p>14</p>  <p>Verify the current of the battery is 0A.</p>	<p>15</p>  <p>Set the safety relay to "remote on".</p>
<p>16</p>  <p>ON OFF</p> <p>Switch on some loads.</p>	<p>17</p>  <p>Verify that a current flows from the battery.</p>	<p>18</p>  <p>OFF ON</p> <p>Switch off load and switch on charger.</p>	<p>19</p>  <p>Verify that a current flows to the battery.</p>	<p>20</p>  <p>Charge battery till charger switch to the float stage.</p>

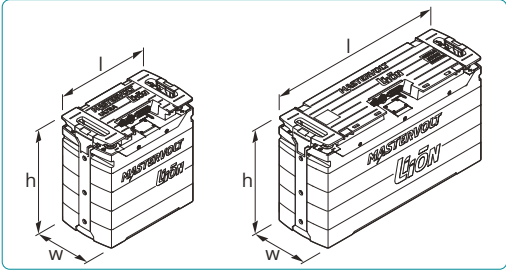


Warning!

The safety relay automatically prevents unsafe overcharge, overdischarge and overheating. The safety relay opens automatically if built-in thresholds are met. This is called a Battery Safety Event. When voltages and temperatures are within safe operating range, the safety relay can be reset (REMOTE ON).

If the relay trips again, a non-resettable battery safety event occurred. In that case, set the safety relay to "LOCK OFF" and contact your supplier or Mastervolt.

Technical data



Technical specifications

Battery chemistry	Lithium Iron Phosphate
Protection degree	IP65 (electronics cabinet)
Parallel connection	yes
Series connection	yes, up to 10 batteries - systems over 48 V require a separate battery box to prevent access to high voltage parts
Protections	over voltage, under voltage, over temperature
Safety relay	to be added mandatorily, product code 7700B-BSS (12V), 7702B-BSS (24V)
Safety relay controls	integrated

General specifications	MLI Ultra 12/3000	MLI Ultra 12/6000	MLI ULTRA 24/6000
Nominal battery voltage	12 V	12 V	24 V
Nominal battery capacity	230 Ah	460 Ah	230 Ah
Nominal battery energy capacity	3000 Wh	6000 Wh	6000 Wh
Cycle life	3500 cycles at 80 % DOD at 25 °C, max. C/3 charge and C/2 discharge	3500 cycles at 80 % DOD at 25 °C, max. C/3 charge and C/2 discharge	3500 cycles at 80 % DOD at 25 °C, max. C/3 charge and C/2 discharge
Max. charge current	230 A	460 A	230 A
Recommended charge current	≤ 80 A	≤ 160 A	≤ 80 A
Max. discharge current	500 A	500 A	500 A
Continuous discharge current	≤ 200 A	≤ 300 A	≤ 200 A
Peak discharge current	1800 A (10 sec.)	1800 A (10 sec.)	1800 A (10 sec.)
Battery monitoring	integrated	integrated	integrated
MasterBus communication	Yes	Yes	Yes
CZone communication	Yes	Yes	Yes
Terminals	M8	M8	M8
Mounting position	upright (recommended) or either long side	upright (recommended) or either long side	upright (recommended) or either long side
Max. outer dimensions l x w x h (incl. terminals/grip handles),	341 x 197 x 355 mm (13.4 x 7.8 x 14.0 inch)	622 x 197 x 355 mm (24.5 x 7.8 x 14.0 inch)	622 x 197 x 355 mm (24.5 x 7.8 x 14.0 inch)
Product weight	25,4 kg (56.0 lb)	46.4 kg (102 lb)	46.4 kg (102 lb)
Compliance	CE, E-Mark, UL1642 (cells only), UN38.3, RVIA compliant	CE, E-Mark, UL1642 (cells only), UN38.3, RVIA compliant	CE, E-Mark, UL1642 (cells only), UN38.3, RVIA compliant



Note!

The voltage range is larger than you may expect from other battery types. Be aware that these voltages can exceed the permissible voltages of the connected loads.



Correct disposal

Discard the device environment-friendly. Obey the local regulations.