LITHIUM BATTERY SYSTEMS

Powering Freedom™

Catalogue 2025

Meadowbrook Manufacturing Workshop
Zone Industrial Park
Unit 4, 20 Ellerslie Rd,
Meadowbrook QLD 4131

www.lithiumbatterysystems.com.au

Pioneers in Lithium Battery Production in Australia

Three experienced engineering professionals formed a unique partnership in 2013 to design, build and supply Lithium Battery Systems to the Australian market. In the early days, the use of Lithium based chemistry in batteries was new, and the development work was groundbreaking. Thankful for government Research and Development tax support and early adopters of the technology, the designs evolved. After recruiting talented local electrical engineering graduates and after dozens of iterative improvements, **the result is a set of blueprints to build the best batteries in the Australian market using local engineering, materials and skilled labor.**

This hard work culminates in a line-up of products that have been built to suit the needs of the users. The BMS and DC-DC Printed Circuit Boards are made using world class surface mount technology in a Class 3 PCB fabrication facility in **Brisbane Queensland**. The current versions of BMS and DC-DC hardware have been installed into tens of thousands of installations including military uses, mining equipment, emergency service vehicles and countless 4WD and canopy conversions.

The mission statement is clear. Design and build the best quality battery systems that are safe, reliable and powerful. That is powering freedom.

Contents

Australian designed and built.

Local engineers and technicians monitor every aspect of the battery production process. Every PCB design, enclosure design, electrical blueprint and the intellectual property is owned and updated in-house.

- CAD enclosure design
- PCB designs and features
- Final QA and overall electrical performance

Fully imported batteries can constantly substitute designs and features and lack quality consistency between batches. All aspects of design are local and under local control.

Metal Outer Cases

The outer cases CAD designed by our engineers and built using powder-coated aluminium.

Aluminium outer cases are strong and lightweight with high heat tolerance. This method of casing is far superior and safer than ABS plastic cases due to 3 times the melting point and better impact resistance so if the conditions get tough the battery is safe.

Fully imported batteries may use ABS plastic because it is cheap. Australian fabricated metal cases are stronger and safer.

Top Quality Components

- US Texas Instruments control logic chips
- German Infinion FET's
- PCB assembly using IPC class 3 AS9100D fabrication plant
- PCB design by Australian Master Electrical Engineers
- Over specification cables and connectors
- Extensive QA checklist on every battery

Fully imported batteries may use cheap clone chips and inferior cables. Placing cost over quality leads to safety risks.

Compliance and Certifications

- IEC 62619 certification on all cells
- IEC62619 on complete batteries
- UN38.3
- Australian EMC certification
- AUS/NZ 3001.2 ready batteries

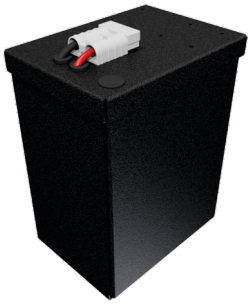
Fully imported batteries may not be compliant and may present an insurance and compliance risk.

Lithium Bat

12V

Compact

12110-Compact



12V

Slim Line

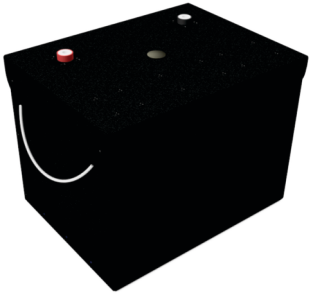
12110 Slim Line Standard
12110 Slim Line DC-DC
12220 Slim Line Standard
12220 Slim Line DC-DC

ttery Range

12V

High Power

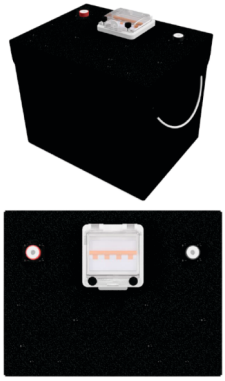
12330
12440



24, 36, 48, 51V

High Voltage

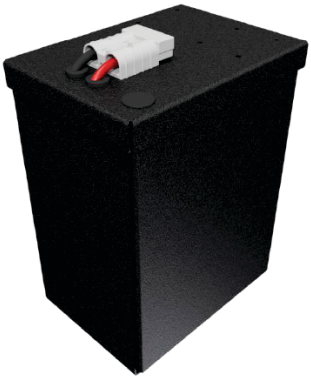
24220
36110
48110
51110

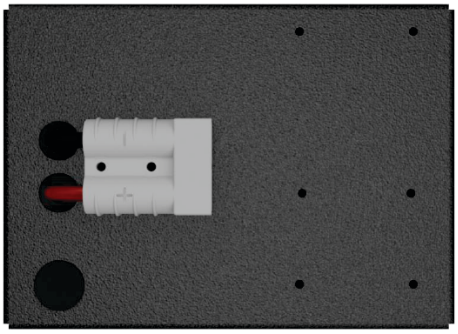


12110-XS120

12V – 110Ah highly compact design that can be used where space is a premium. The most energy dense size available.

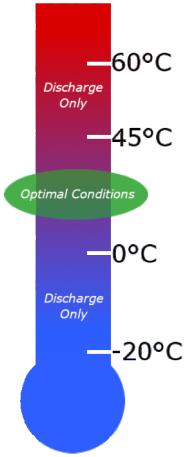
Installed in the wheel well of emergency services vehicles, in power boxes for camera monitoring, campers, caravans, canopies & 4WDs.

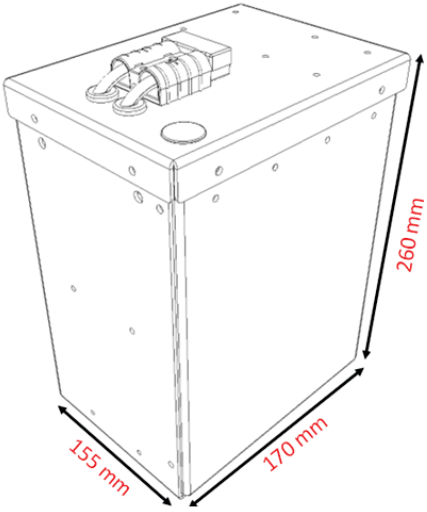




12110-XS120 Specifications

Nominal Voltage	12 V
Nominal Capacity	110 Ah
Nominal Energy	1.3 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	Yes (2 in series max)





L	170mm
D	155mm
H	260mm
H2	277mm
W	11.0kg
WP	11.4kg
	1.3kWh
	1 x Grey Anderson

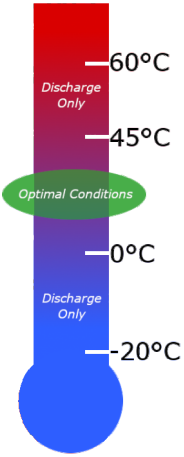
12110-SL120

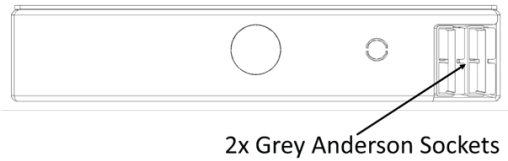
12V – 110Ah Slim Line designed to go behind the rear seat in most 4WD's. Also used in places where the 50mm slim profile is required.

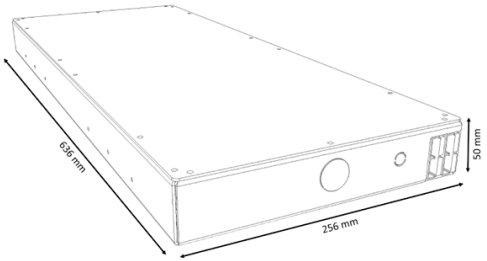
Installed in thousands of 4WD's behind the back seat. Perfect fit for Ford Ranger, Mazda BT50, ISUZU MU-X, Toyota Hilux, Nissan Patrol and others. Also used in emergency services vehicles, caravans, campers and 4WD canopy conversions.

12110-SL120 Specifications

Nominal Voltage	12 V
Nominal Capacity	110 Ah
Nominal Energy	1.3 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	Yes (2 in series max)







L	636mm
D	256mm
H	50mm
W	12.5kg
WP	13kg
1.3kWh	
2 x Grey Anderson	

12110-SL120-DCS20

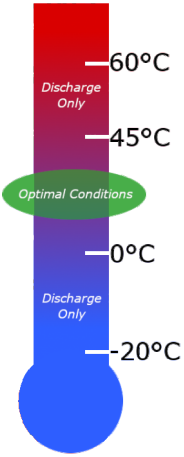
12V - 110Ah – Slim Line - Integrated 20A DC-DC charger. The 50mm slim design with integrated DC-DC charger saves time, money and reduces installation complexity.

Installed in thousands of 4WD's and is the most popular battery in the entire line up. Fits perfectly behind the back seat of Ford Ranger, Mazda BT50, ISUZU MU-X, Toyota Hilux, Nissan Patrol and others. Also In emergency services vehicles, caravans, campers and 4WD canopy conversions.

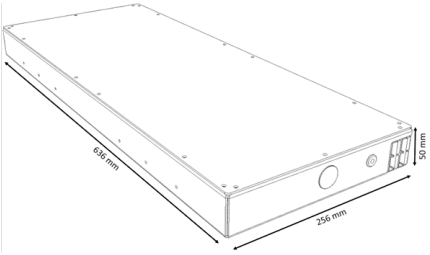
INTEGRATED DC-DC CHARGER

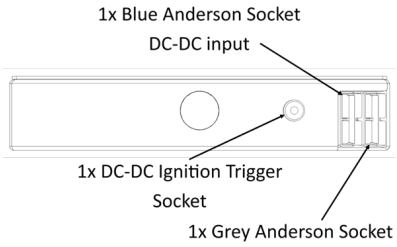
12110-SL120-DCS20 Specifications

Nominal Voltage	12 V
Nominal Capacity	110 Ah
Nominal Energy	1.3 kWh
Input Charge Voltage	13.8 V - 14.6 V
	14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont.
	240 A surge
Parallel Capable	Yes
Series Capable	No



Integrated 20A DC-DC Charger





L	636mm
D	256mm
H	50mm
W	12.9kg
WP	13.3kg

1.3kWh

1 x Grey Anderson
1 x Blue Anderson
1 x 4mm Ignition Trigger

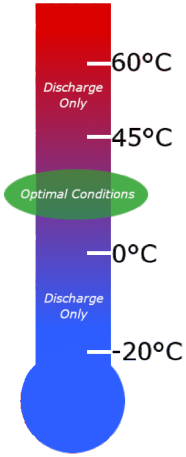
12220-SL240

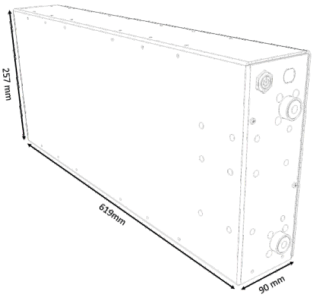
12V - 220Ah – Slim Line - The 90mm slim design with 240A continuous discharge can deliver the power for a 3000VA Inverter.

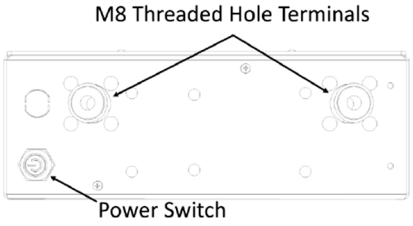
Fits perfectly behind the back seat of Ford Ranger, Mazda BT50, ISUZU MU-X, Toyota Hilux, Nissan Patrol and others. Also In emergency services vehicles, caravans, campers and 4WD canopy conversions. Designed to stack with the CM1 Control Module.

12220-SL240 Specifications

Nominal Voltage	12 V
Nominal Capacity	220 Ah
Nominal Energy	2.6 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	240 A max.
Discharge Current	240 A max cont. 480 A surge
Parallel Capable	Yes
Series Capable	Yes (2 in series max)







L	609mm
L2	619mm
D	256mm
H	90mm
W	23.5kg
WP	24.0kg
	2.6kWh
	2 x M8 Insert Terminal
	Off/On Switch

12220-SL240-DCS40

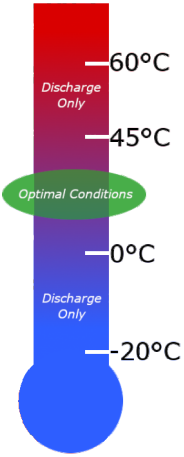
12V - 220Ah – Slim Line - Integrated 40A DC-DC charger. This powerful 90mm slim design where extra capacity and power are required. Can drive a 3000VA inverter.

Installed extensively in canopy conversions, caravans and high-end 4WD set-ups. Ideal for the installation where standard 240V electrical appliances are needed with an inverter or where extra DC power is required.

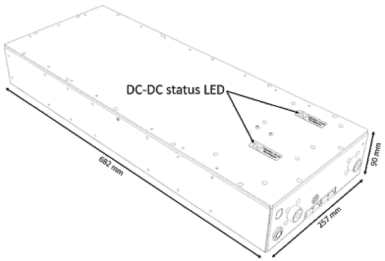
INTEGRATED DC-DC CHARGER

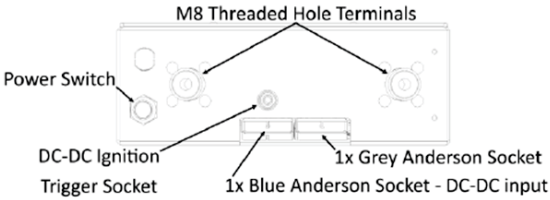
12220-SL240-DCS40 Specifications

Nominal Voltage	12 V
Nominal Capacity	220 Ah
Nominal Energy	2.6 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	240 A max.
Discharge Current	240 A max cont. 480 A surge
Parallel Capable	Yes
Series Capable	No



Integrated DC-DC Charger





L	672mm
L2	682mm
D	256mm
H	90mm
W	24.5kg
WP	25.0kg

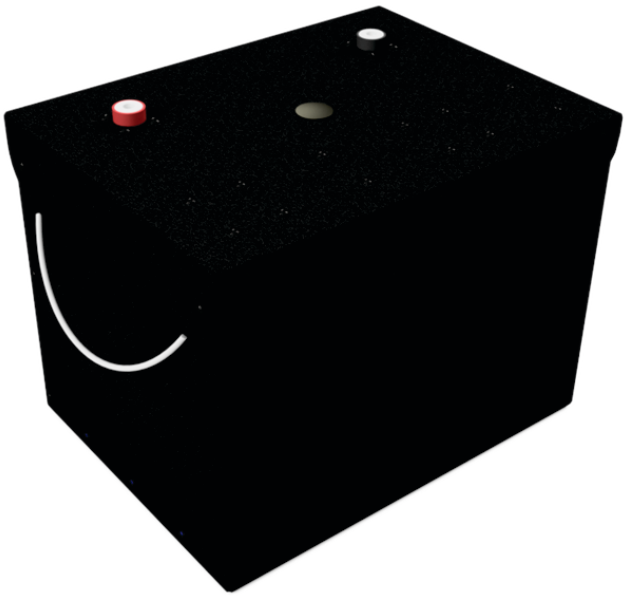
2.6kWh

1 x Grey Anderson
1 x Blue Anderson
1 x 4mm Ignition Trigger
2 x M8 Insert Terminal
Off/On Switch

12330-M240

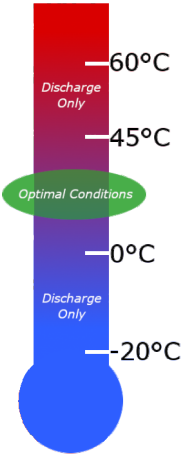
12V - 330Ah, 3.9kW battery with 240A discharge capacity.

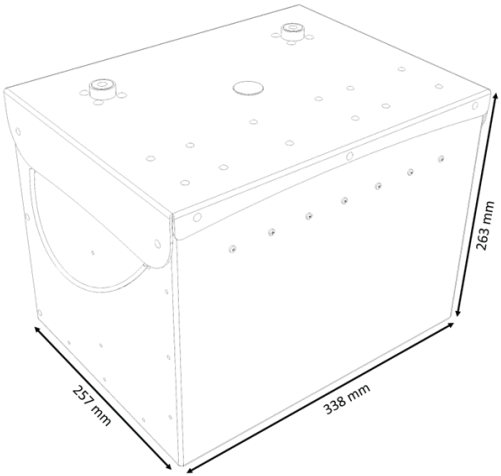
Installed in many caravan and home power systems. Stackable and able to be put into parallel to build large capacity systems.



12330-M240 Specifications

Nominal Voltage	12 V
Nominal Capacity	330 Ah
Nominal Energy	3.9 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	240 A max.
Discharge Current	240 A max cont. 480 A surge
Parallel Capable	Yes
Series Capable	Yes (2 max)





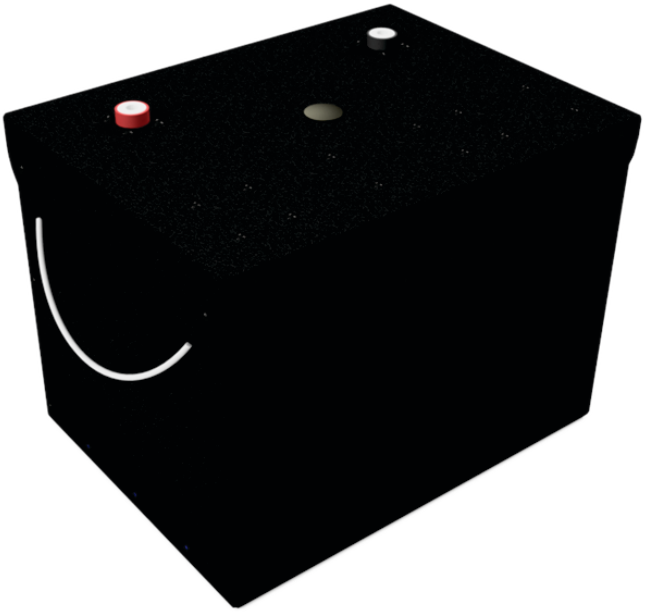
L	360mm
D	277mm
H1	283mm
H2	293mm
W	29.5kg
WP	30.0kg
	3.9kWh
	2 x M8 Insert Terminal

124400-M400

12V - 440Ah, 5.2kWh battery with 400A discharge capacity.

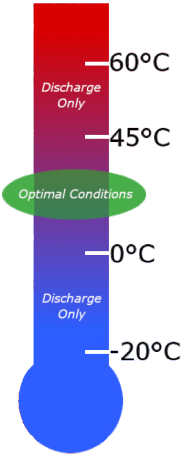
A massive 440Ah battery with 400A continuous current output and 800A surge capacity.

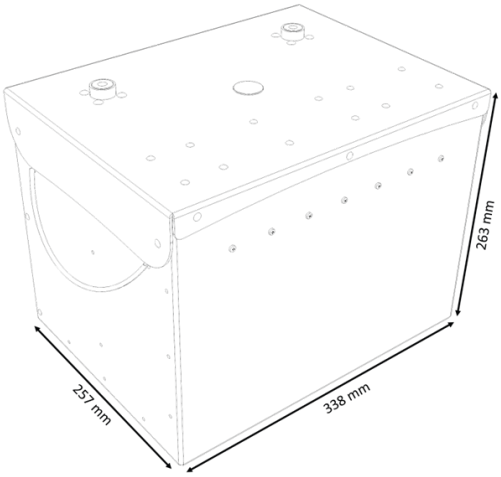
Installed in caravans and 12V applications where this single battery can drive a massive 5000VA inverter.



124400-M400 Specifications

Nominal Voltage	12 V
Nominal Capacity	440 Ah
Nominal Energy	5.2 kWh
Input Charge Voltage	13.8 V - 14.6 V 14.0 V recommended
100% SoC Voltage	13.8 V
Low Voltage cut-off	10.5 V approx.
Charge Current	400 A max.
Discharge Current	400 A max cont. 800 A surge
Parallel Capable	Yes
Series Capable	Yes (2 max)





L	360mm
D	277mm
H1	283mm
H2	293mm
W	39.5kg
WP	41.5kg

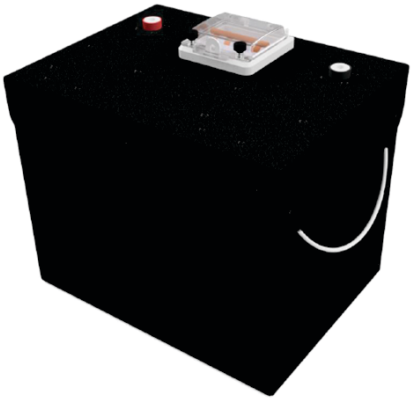
5.2kWh

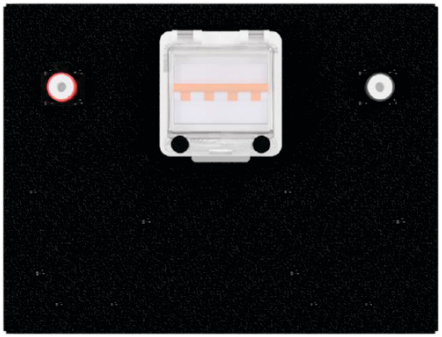
2 x M8 Insert terminals

24220-M240

24V - 220Ah with 240A continuous current output and 480A surge capacity. Integrated circuit breaker

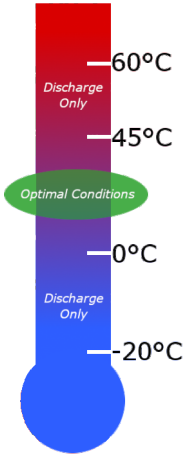
Installed in caravans, canopy conversions, 24V home storage systems

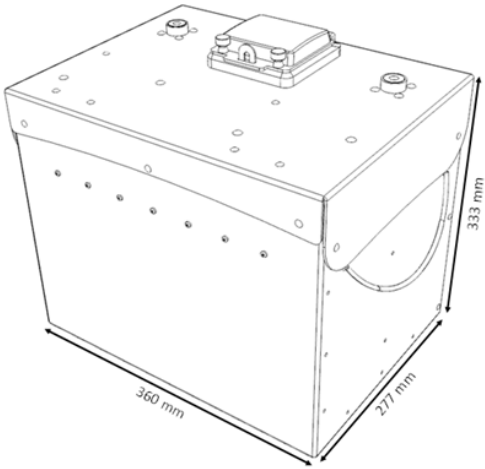




24220-M240 Specifications

Nominal Voltage	24 V
Nominal Capacity	220 Ah
Nominal Energy	5.2 kWh
Input Charge Voltage	27.6 V - 29.2 V 28.0 V recommended
100% SoC Voltage	27.6 V
Low Voltage cut-off	21 V approx.
Charge Current	240 A max.
Discharge Current	240 A max cont. 480 A surge
Parallel Capable	Yes
Series Capable	Yes (2 max)





L	360mm
D	277mm
H1	303mm
H2	333mm
W	41.5kg
WP	42.0kg

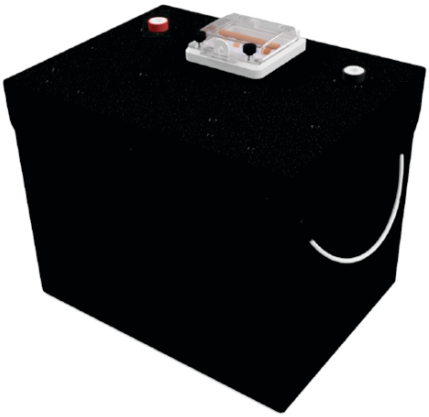
5.2kWh

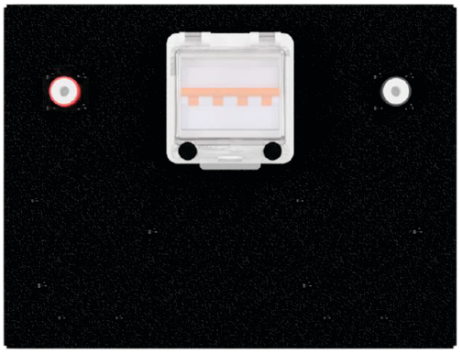
2 x M8 Insert terminals
Double Pole Isolation Breakers

36110-M120

A 36V 110Ah unit with 3.9kWh stored capacity.

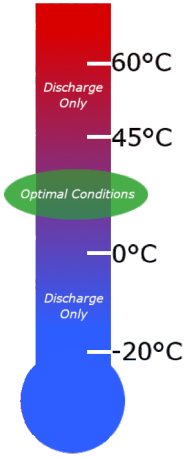
Installed in golf carts and other utility applications running on 36V systems.

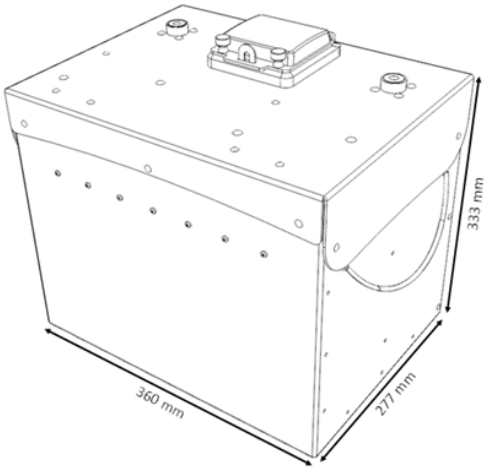




36110-M120 Specifications

Nominal Voltage	36 V
Nominal Capacity	110 Ah
Nominal Energy	3.9 kWh
Input Charge Voltage	41.4 V - 43.8 V 42.0 V recommended
100% SoC Voltage	41.4 V
Low Voltage cut-off	31.5 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	No





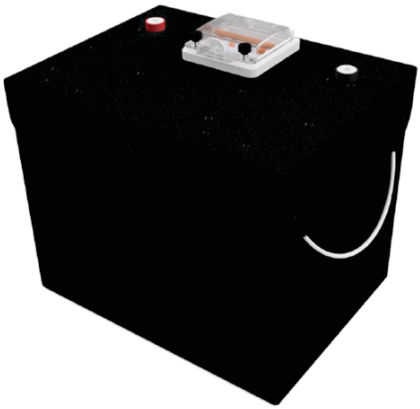
L	360mm
D	277mm
H1	303mm
H2	333mm
KG W	29.5kg
WP	30.0kg
	3.9kWh

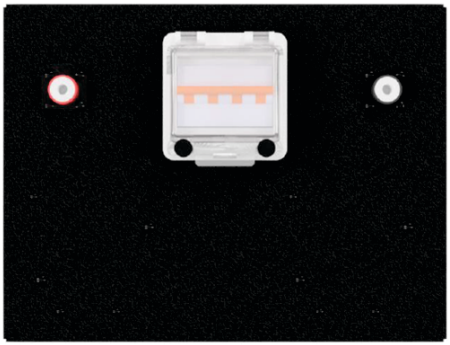
2 x M8 Insert terminals
Double Pole Isolation Breakers

48110-M120

A 15 cell, nominal 48V, 5.0kWh battery with a 120A discharge capability.

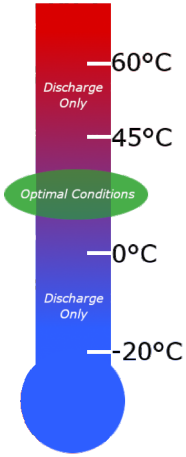
Used extensively in off grid applications and golf cart, utility electric vehicles. Stackable and able to be put into parallel to build large capacity systems.

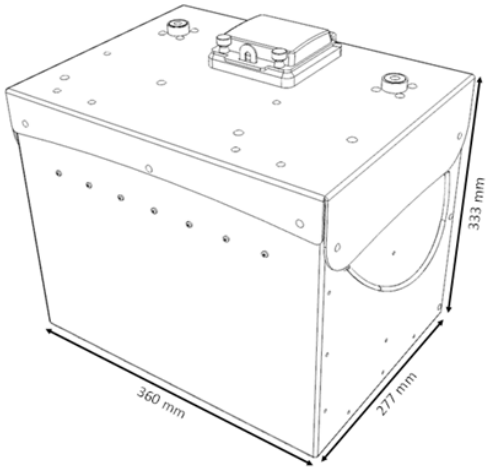




48110-M120 Specifications

Nominal Voltage	48.0 V
Nominal Capacity	110 Ah
Nominal Energy	5.2 kWh
Input Charge Voltage	51.8 V - 54.8 V 52.5 V recommended
100% SoC Voltage	51.8 V
Low Voltage cut-off	40.0 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	No





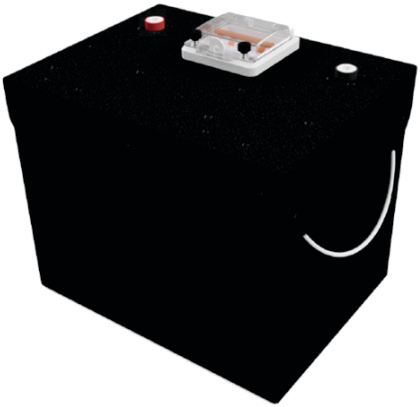
L	360mm
D	277mm
H1	303mm
H2	333mm
W	39.5kg
WP	40.0kg
	5.0kWh

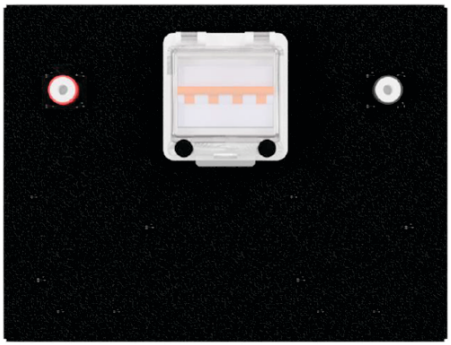
2 x M8 Insert terminals
Double Pole Isolation Breakers

48110-M240

A 15 cell, nominal 48V, 5.0kWh battery with a 240A discharge capability.

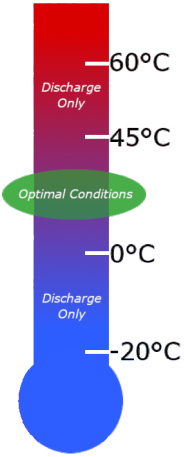
Used extensively in off grid applications and golf cart, utility electric vehicles. Stackable and able to be put into parallel to build large capacity systems.

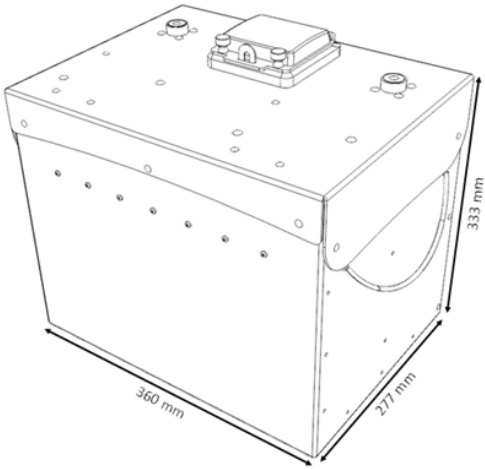




48110-M240 Specifications

Nominal Voltage	48.0 V
Nominal Capacity	110 Ah
Nominal Energy	5.0 kWh
Input Charge Voltage	51.8 V - 54.8 V 52.5 V recommended
100% SoC Voltage	51.8 V
Low Voltage cut-off	40.0 V approx.
Charge Current	240 A max.
Discharge Current	240 A max cont. 480 A surge
Parallel Capable	Yes
Series Capable	No





L	360mm
D	277mm
H1	303mm
H2	333mm
W	39.5kg
WP	40.0kg

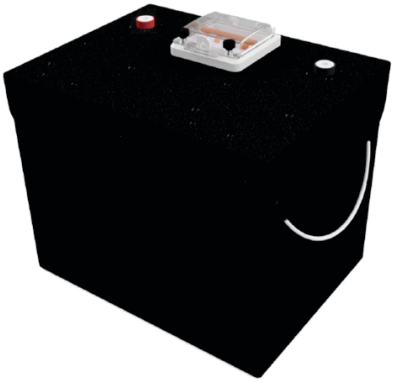
5.0kWh

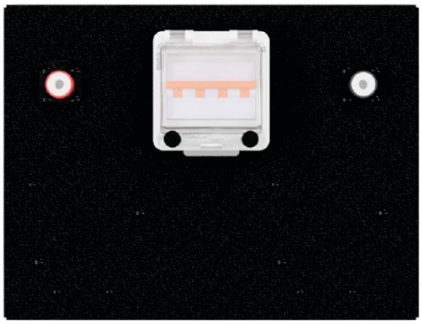
2 x M8 Insert terminals
Double Pole Isolation Breakers

51110-M120

A 16 cell, nominal 51.2V, 5.2kWh battery with a 120A discharge capability.

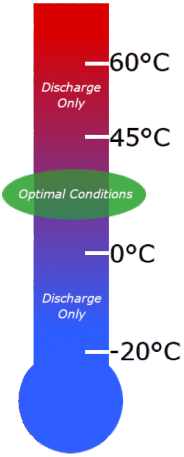
Used extensively in off grid applications and golf cart, utility electric vehicles. Stackable and able to be put into parallel to build large capacity systems.

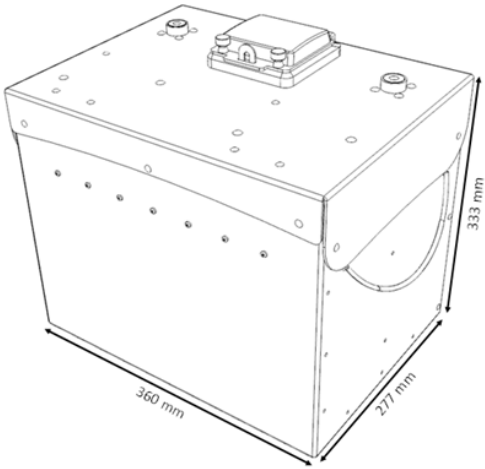




51110-M120 Specifications

Nominal Voltage	51.2 V
Nominal Capacity	110 Ah
Nominal Energy	5.2 kWh
Input Charge Voltage	55.2 V - 59.2 V 56 V recommended
100% SoC Voltage	55.2 V
Low Voltage cut-off	42.6 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	No





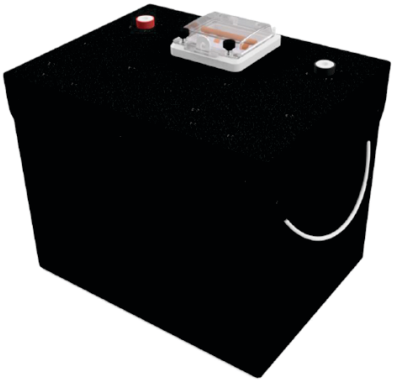
L	360mm
D	277mm
H1	303mm
H2	333mm
W	41.5kg
WP	42.0kg
	5.2kWh

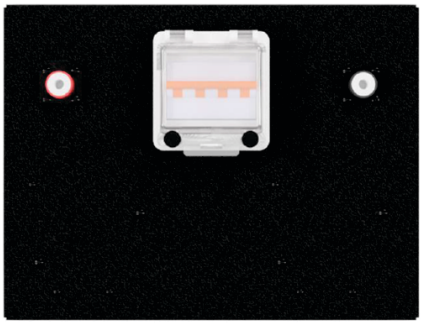
2 x M8 Insert terminals
Double Pole Isolation Breakers

51110-M240

A 16 cell, nominal 51.2V, 5.2kWh battery with a 240A discharge capability.

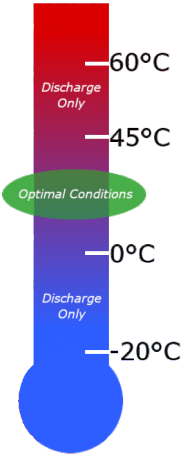
Used extensively in off grid applications and golf cart, utility electric vehicles. Stackable and able to be put into parallel to build large capacity systems.

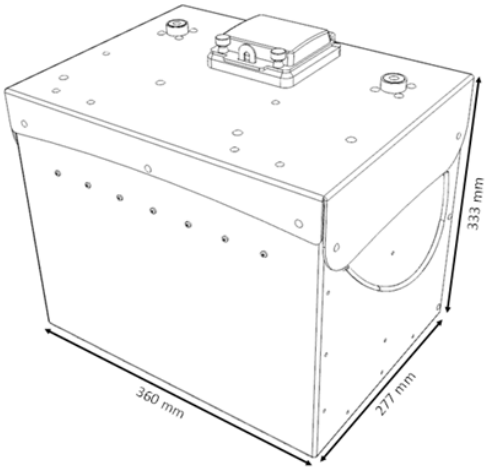




51110-M240 Specifications

Nominal Voltage	51.2 V
Nominal Capacity	110 Ah
Nominal Energy	5.2 kWh
Input Charge Voltage	55.2 V - 59.2 V 56 V recommended
100% SoC Voltage	55.2 V
Low Voltage cut-off	42.6 V approx.
Charge Current	120 A max.
Discharge Current	120 A max cont. 240 A surge
Parallel Capable	Yes
Series Capable	No





L	360mm
D	277mm
H1	303mm
H2	333mm
W	41.5kg
WP	42.0kg

5.2kWh

2 x M8 Insert terminals
Double Pole Isolation Breakers

Control Modules CM1/CM2

Integrating Solar Controller, DC-DC charger, Monitor Shunt, interconnects, circuit breakers and diagnostic voltmeters into a simple single element. Add batteries and an inverter for a complete Caravan System.

4 x (CM1) or 3 x (CM2) Grey Andersons I/O
1 x Blue Anderson
1 x (CM1) or 2 x (CM2) Red Andersons
1 x 4mm Ignition Trigger Input
4 x 8mm Insert Terminals (Battery In – Loads Out)

Features

- Strong, compact aluminium enclosure
- Integrated DC-DC Charger
- Integrated Solar Charger
- Bluetooth monitoring
- Remote Monitoring Screen
- Threaded Hole M8 In/Out Terminals
- 1 x Red Anderson (Solar In) – CM1
- 2 x Red Anderson (Solar In) – CM2
- 1 x Blue Anderson connector (DC In)
- 3/4 x Grey Anderson connectors (50A In/Out)
- Input & Output Circuit Breakers
- Input & Output Voltmeters
- Designed and fully assembled in Australia

Specifications

Model	CM1 and CM2
DC-DC Charger	40A, 10-15V Input
Solar MPPT Charger	MPPT 50A (CM1), 100A (CM2)
Monitoring	Victron BMV-712
Operating Temp.	0-45°

Included Extras

Mounting bracket kit
Remote monitoring screen

L	257mm
D1	260mm
D2	290mm
H	170mm

KG

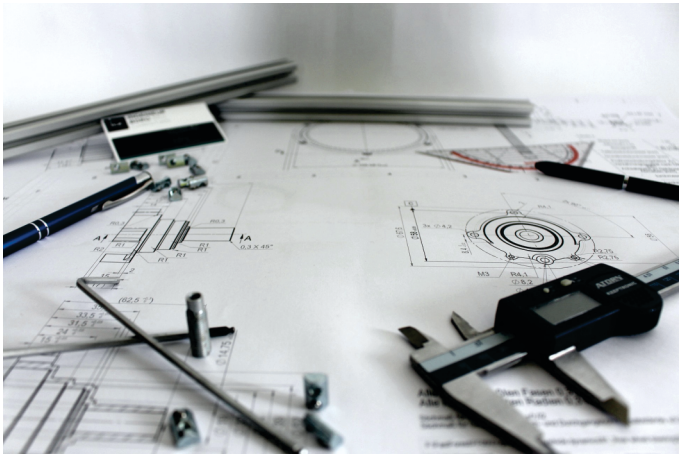
W	6kg/8kg
WP	6.4kg/8.4kg

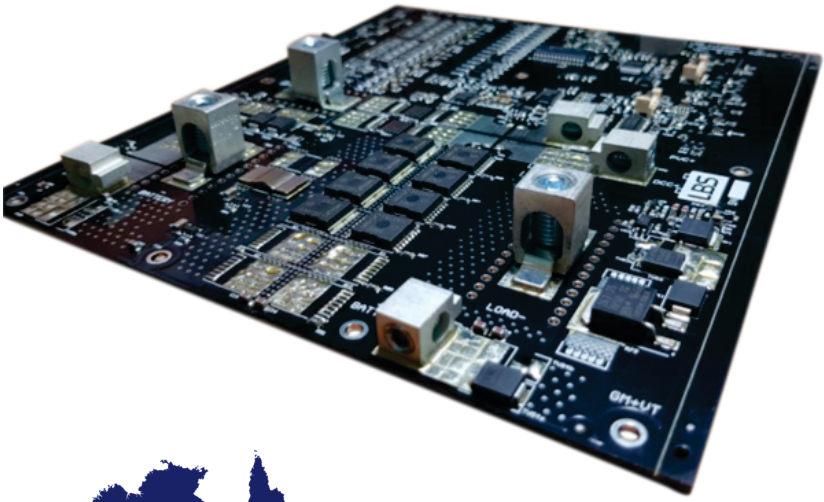
BMS & DC-DC Printed Circuit Boards

The BMS and DC-DC Printed Circuit Boards are manufactured in **Brisbane, Queensland** with world class machinery and under the rigours of internationally recognised standards.

ISO9001 which is a framework for consistent quality and demonstrates an ongoing commitment to maintaining recognised independent third-party audits and standards.

AS9100D specifies the QMS (Quality Management System) for organisations that design, develop or manufacture aviation, space, and defence products. The AS9100 standard is acknowledged worldwide.

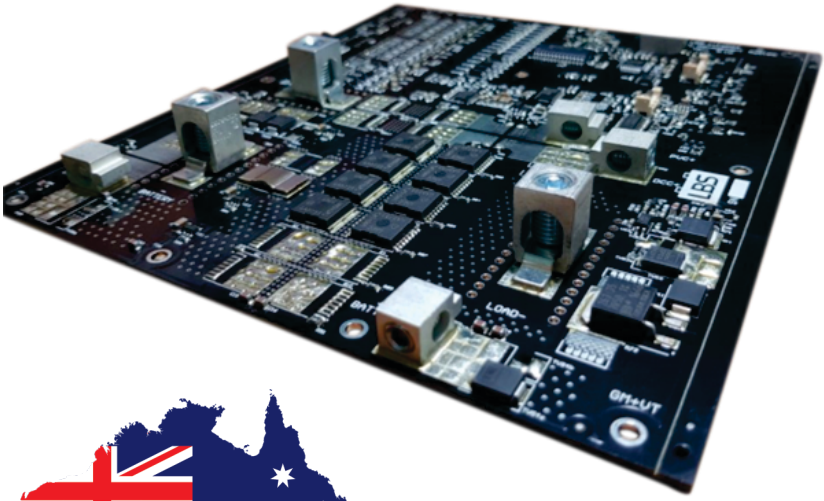




- Made in Australia
- US Texas Instruments control chips
- German Infineon FETs
- Dual Layer Surface mount PCB technology
- AI Quality Assurance tested
- Meets IEC 62619 & AUS/NZ 3001.2 requirements

Battery Management System (BMS)

- Australian designed and built
- Over Current Protection with auto reset
- Low Voltge disconnect
- Short Circuit Protection with auto reset
- Over Temperature Protection
- Under Temperature Protection
- Smart Active Cell Balancing
- TVS Diode spike energy suppression



Smart 12V DC-DC Internal Charger

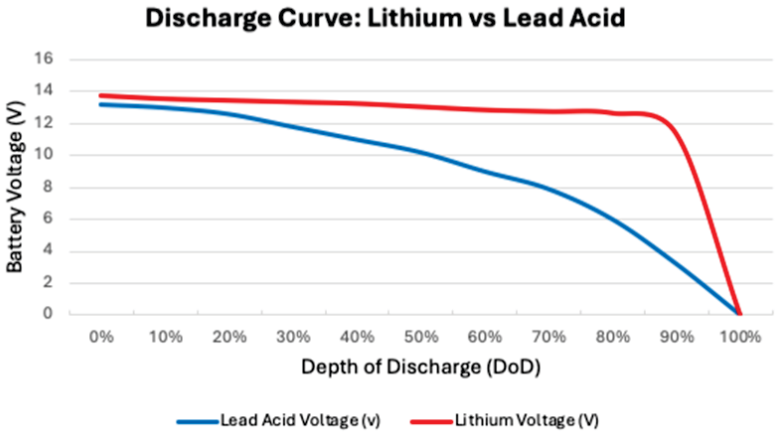
- Australian designed and built
- 2 Stage Constant Current – Constant Voltage design
- Smart Sense to work with Smart Alternators
- Smart Start Up to commence charge with depleted batteries automatically
- Ignition Trigger mode or VSR mode
- Smart Timer offsets

Quality Lithium Cells

- LiFePO4 Chemistry
- Hard Case Aluminium Construction
- Complete IEC62619 certification
- Passed within complete battery systems to
- IEC62619, UN38.3 & AUS/NZ 3001.2 requirements
- Over charge - GB/T 36276, IEC62133, UN38.3, IEC62619
- Cell Short Circuit - GB/T 36276, IEC62133, UN38.3, IEC62619, UL1642
- Pack Short Circuit - IEC62133
- Drop Test - GB/T 36276, IEC62133, IEC62619
- Heat Test - GB/T 36276, IEC62133, IEC62619,UL1642
- Crush Test GB/T 36276,IEC62133, UL1642,UN38.3
- Weight impact GB/T 36276, IEC62619, UL1642, UN38.3
- Temperature Cycle UL1642, UN38.3
- Low air pressure Test GB/T 36276, UL1642, UN38.3

- Life at 80% DoD - 2000 cycles
- Life at 50% DoD - 5000 cycles

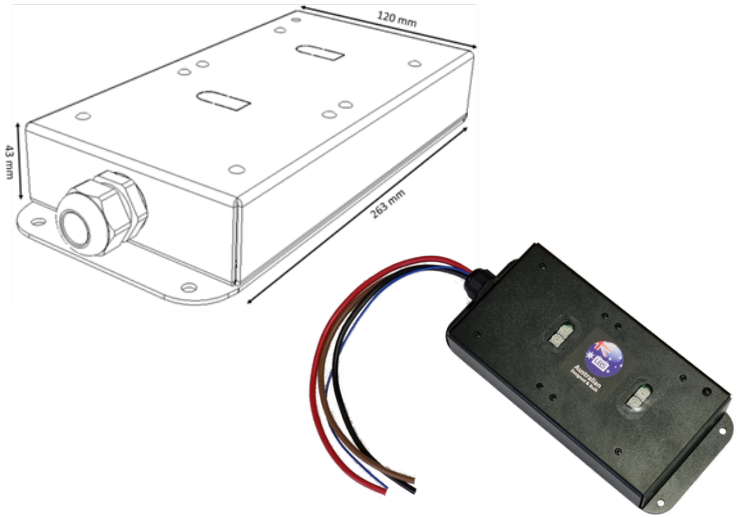

lithium
3
Li
6.941


Discharge Curve: Lithium vs Lead Acid
Battery Voltage (V)
16
14
12
10
8
6
4
2
0
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%
Depth of Discharge (DoD)
Lead Acid Voltage (v)
Lithium Voltage (V)

DC-DC Charger

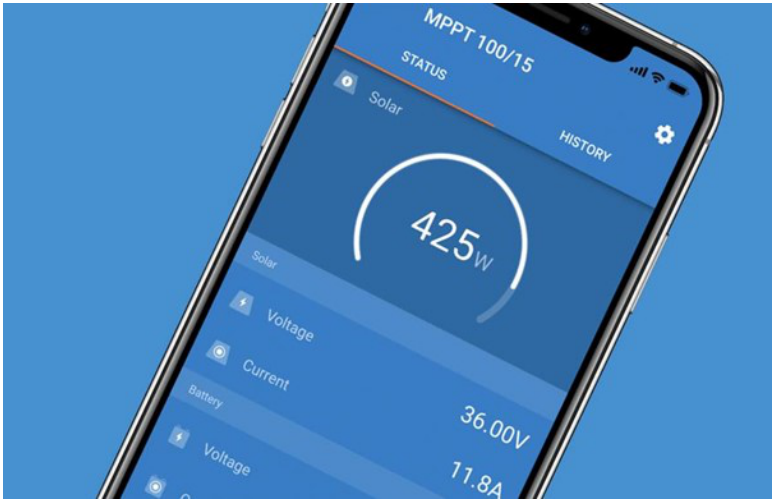
These DC-DC chargers are designed and built in Australia and dedicated to charging Lithium batteries.

- Auto start-up for low charge batteries
- 20 or 40A models
- Operating Voltage Input 10-15V
- VSR mode or Ignition Trigger mode
- Smart timer de-latch to optimise charging for use with Smart Alternators.
- These Lithium optimised chargers are foolproof and don't interfere with the BMS control over charging.



Bluetooth Monitor

- Built using the platform of the Victron BMV Smart Shunt
- Pre-wired and easy to install connections
- Allows input for these DC-DC chargers



Dedicated Chargers

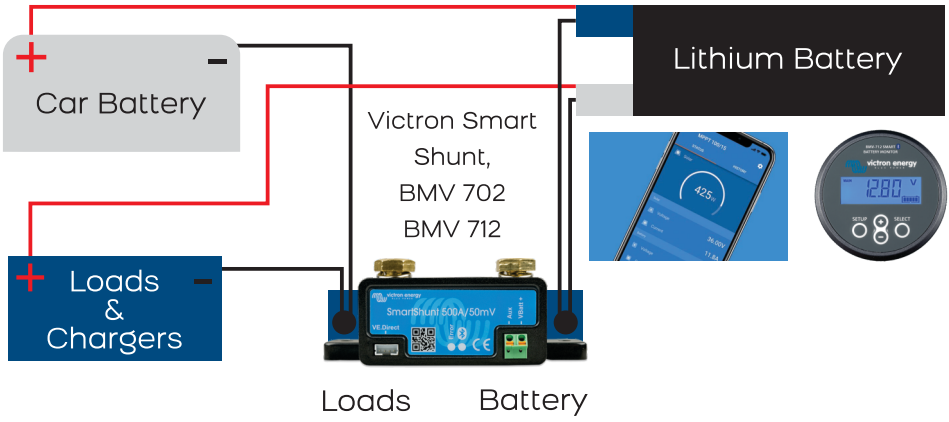
Lithium chargers have a different operating profile to multistage lead acid, AGM type chargers.

These Lithium optimised chargers are foolproof and don't interfere with the BMS control over charging.

12V /24V / 36V / 48V / 51V Chargers

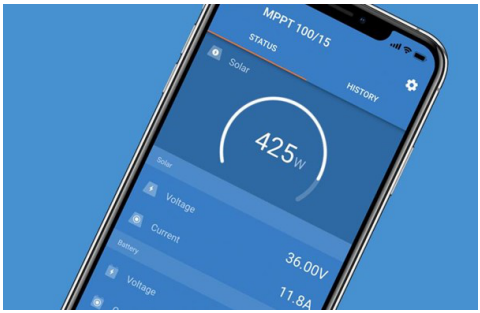
- Factory set voltage output optimised for 12/24/36/48/51 Volt batteries.
- Factory set current output defaulted to maximum output but adjustable for low current charging if required.
- Instant Start regardless of battery SOC
- Allow charging disconnect to be performed by the battery BMS
- IP67 solid state with no moving parts

Adding Bluetooth monitoring to your Lithium Battery

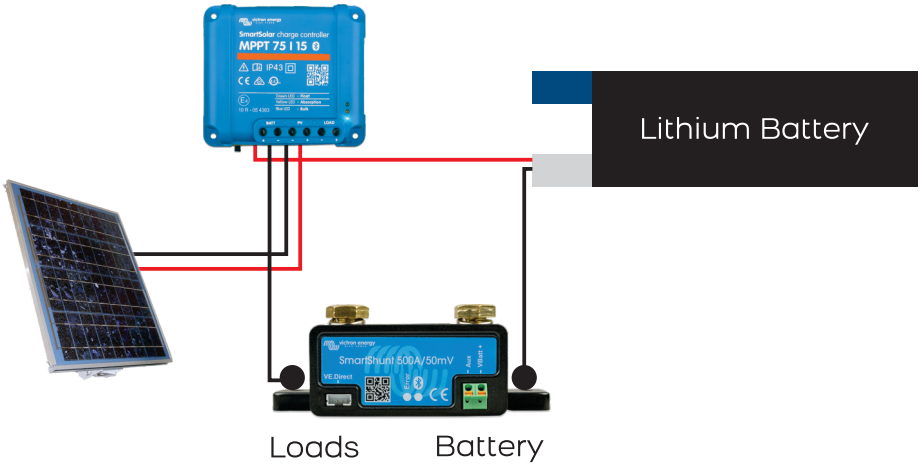


Adding Bluetooth monitoring to your Lithium Battery

- Must connect the NEG (Black) from the Grey Anderson or Terminals to the BATTERY MINUS Side of the Shunt using a M10 Ring connection
- Must connect the power for the shunt to any power source but the POS (Red) of this power source must be referenced to the same NEG as the current passing through the shunt.
- You can connect the Vbatt+ to the Lithium battery and the Aux connection to the start battery and then you will be able to also see the voltage of the start battery
- Must connect all loads and all chargers to the LOAD MINUS side of the shunt. This includes the incoming DC-DC NEG from the start battery.

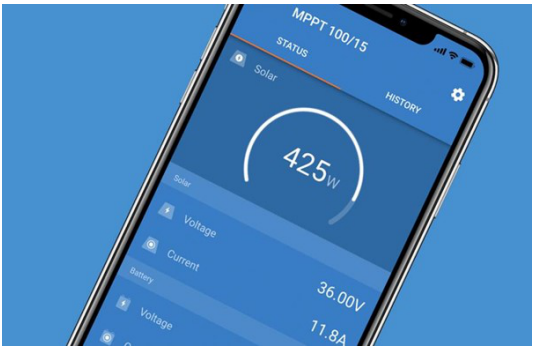


Adding Solar to your Battery

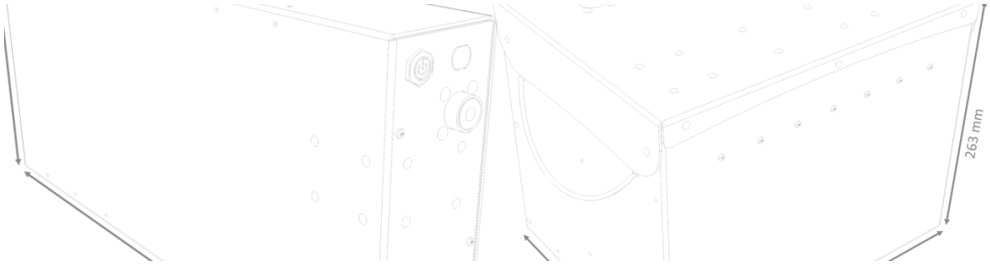


Adding Solar to your Battery

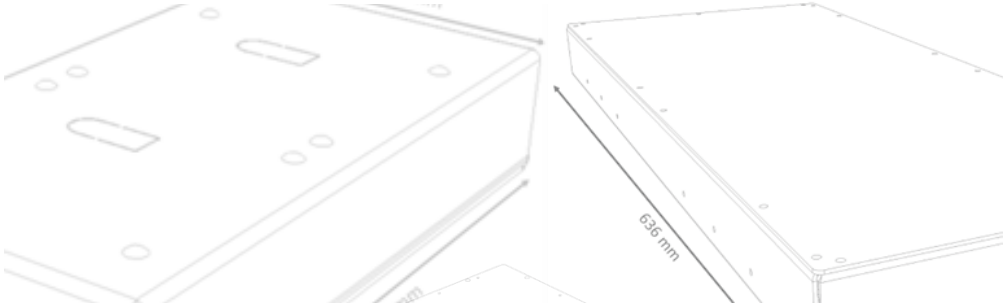
- Must use a solar controller either MPPT or PWM that is suitable for the panels that you are using and set to 12V battery system
- Must connect the output of the solar controller to the Grey Anderson (not the Blue Anderson) of the battery
- If using a shunt, then the NEG (Black) output of the solar controller must be connected to the load side of the shunt.



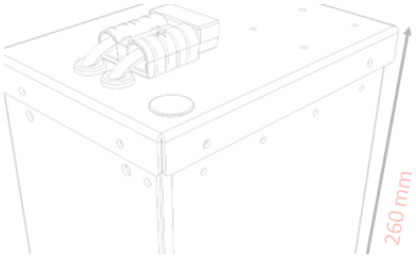
Specifications Summary



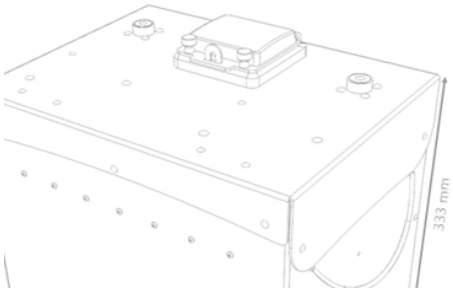
Part Number	Family	Nominal V	Ah	Kwh	L1	L2	D	H1	H2
12110-XS120	Compact	12	110	1.3	170	170	155	260	277
12110-SL120	Slim Line	12	110	1.3	636	636	256	50	50
12110-SL120-DCS20	Slim Line	12	110	1.3	636	636	256	50	50
12220-SL240	Slim Line	12	220	2.6	609	619	256	90	90
12220-SL240-DCS40	Slim Line	12	220	2.6	672	682	256	90	90
12330-M240	High Power	12	330	3.9	360	360	277	283	293
12440-M400	High Power	12	440	5.2	360	360	277	283	293
24220-M240-CB	High Voltage	24	220	5.2	360	360	277	303	333
36110-M120-CB	High Voltage	36	110	3.9	360	360	277	303	333
48110-M120-CB	High Voltage	48	110	5.0	360	360	277	303	333
48110-M240-CB	High Voltage	48	110	5.0	360	360	277	303	333
51110-M120-CB	High Voltage	51	110	5.2	360	360	277	303	333
51110-M240-CB	High Voltage	51	110	5.2	360	360	277	303	333

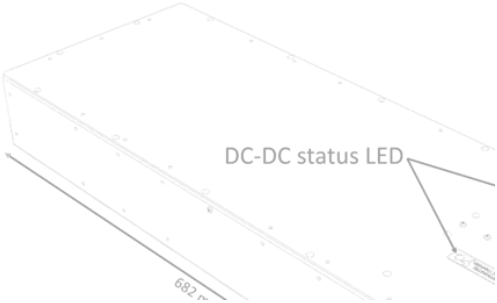


Specifications Summary



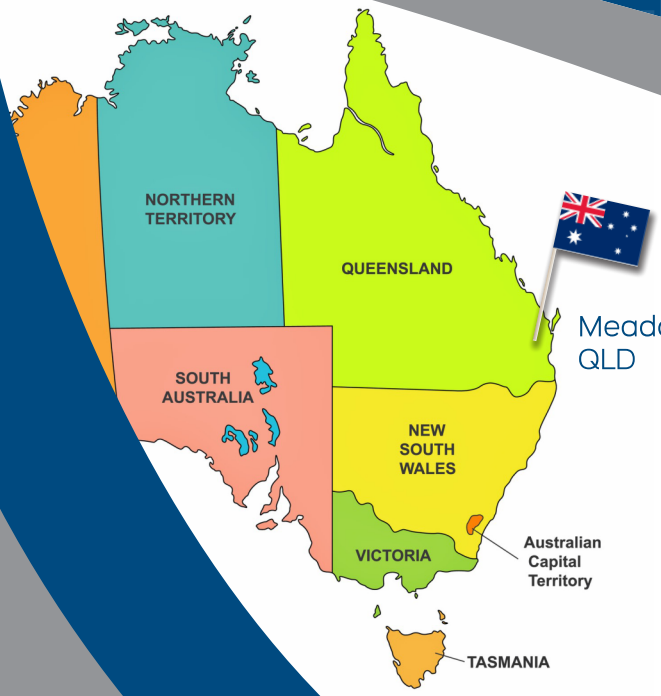
Part Number	Weight kg	Packaged Weight kg	DC-DC	Charge A	Discharge A
12110-XS120	11	11.4	N	120	120
12110-SL120	12.5	13.0	N	120	120
12110-SL120-DCS20	12.9	13.3	20	120	120
12220-SL240	23.5	24.0	N	240	240
12220-SL240-DCS40	24.5	25.0	40	240	240
12330-M240	29.5	30.0	N	240	240
12440-M400	41.5	42.0	N	400	400
24220-M240-CB	41.5	42.0	N	240	240
36110-M120-CB	29.5	30.0	N	120	120
48110-M120-CB	39.5	40.0	N	120	120
48110-M240-CB	39.5	40.0	N	240	240
51110-M120-CB	41.5	42.0	N	120	120
51110-M240-CB	41.5	42.0	N	240	240





LITHIUM BATTERY SYSTEMS

Powering Freedom™



Meadowbrook
QLD