2021 English Catalogue

Lithium Batteries

60Ah | 100Ah | 120Ah

Solar + Batt-Batt

High Power Batt-Batt

Q4 2020

Semi-Flex Solar

18W
55W
120W
150W

Induction Hobs

Waterproof Batt-Batt

Custom cabling, any sizes, any lengths.
Other DC accessories, new fuses and fuse holders.

STERLING POWER

Market leaders in battery charging technology, on board power and power distribution for marine, security, commercial, domestic and recreational applications.

Distribution Network

UNITED KINGDOM:
Marathon Leisure (Marine)
Teal Building
Northney Marina
Hayling Island
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Intellitec MV Ltd (Automotive)
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www.beaconsandlightbars.co.uk
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+44(0) 2392668621
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8 Flanders Park
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Battery Megastore
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Bay Marine Supply
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San Diego, CA 92110
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Midwest Marine Supplies
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(586) 778-8950

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521 Central Dr #201
Virginia Beach, VA 23454
Phone: 757-463-1561

Get Feet Wet Navigation, INC
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Moorpark, CA 93021
United States

Cruise RO Water
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Escondido, CA
92027 USA
619-609-3432

Island Water World Off Shore
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Cole Bay
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Mathiesen Marine Services
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CA 94608,
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510 428 1690

Odyssey Southeast
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Ft. Lauderdale,
FL 33315
(954) 766-2570

Brooklin Boat Yard
44 Center Harbor Rd,
Brooklin,
ME 04616

C TECH Marine Electric
671 10th Street
Blaine, WA 98230
Phone: 360.739.4121

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Vancouver,
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Ontario Battery Services
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Catalogue Contents

Brief warranty statement and Sterling Power's UK location

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DROITWICH, WORCESTERSHIRE
WR9 0NX

2 years return to factory warranty. Sterling shall endeavour to replace the product or repair it within 5 working days of it being returned. Sterling is not liable for return carriage or additional labour. Lifetime repair policy after 2 years - If it is uneconomical to repair the product then a special discount may be offered on a similar product at Sterling's discretion. This only occurs if dealt with Sterling directly.

Pro Charge Ultra.

Award Winning Global AC/DC Battery Charger

PCU SERIES 5 YEAR WARRANTY

Models:
12V / 10-60A
24V / 20-30A
32V / 20A
36V / 20A
48V / 15A
.

One of the world's most efficient chargers. This is courtesy of **active power factor correction** (PFC 0.99-1). The Pro Charge Ultra is rated at over 90% efficient. PFC is an extremely important feature please refer to **Page 65**. Non-active PFC chargers are approximately 65% efficient.

Truly Global Application and perfect for generators. The Pro Charge Ultra shall work at **AC voltages (80-270VAC and 40-70Hz) and DC voltages (130-320V).**

UL 1236 SB listed, the highest build standard.
California Energy Commission CEC.

Comprehensive 32 LED front panel. The user is provided with a **voltmeter, ammeter and output power display**. The panel also includes charging profile statuses and warning statuses.

Multi Lingual. The Pro Charge Ultra now comes with **front labels**, **Remote control** and **instructions in different** languages: English, French, German and Spanish.

11 pre-programmed charging profiles for AGM, Gel, sealed/flooded, calcium and lithium ($LiFePO_4$) batteries. We also include a **customizable** option to allow the user to programme their own profile via the front panel.

Larger voltage / current requirements? The Pro Charge Ultra series can be put in series or parallel with other Pro Charge Ultras. This is enabled due to the PCU's dynamic charging ability.

World's Best Seller
This charger's design is the charger of choice by the world's largest production boat builders. It is fitted to more new boats than any other charger in the world.

Power Pack / Power Supply. This charger works effortlessly as a power supply to DC loads to prevent depletion of your battery capacity.

Battery Temperature compensation sensor included.

Automatic Desulphation mode: 7-10 days cycle with anti-stratification program to keep batteries rejuvenated.

Perfect for generator use. Due to its active PFC tolerance of AC input it shall run from crude sine wave forms - typical from generators. *Also*, **% Power Reduction** you can set the charger to run at lower power outputs to complement a wider range of generators and low shore power connections.

STANDARDS AND ADVANCED SPECIFICATIONS

UL 1236 SB
CEC listed
CSA C22.2-107.2
Tested to CE standards
EN61000-3-2
EN61000-3-3
EN55014-1
EN 55014-2
EN60335-2-29
EN ISO 13297
EN 6100-3-2 Class A

12V / 60A model, all other units pro rata

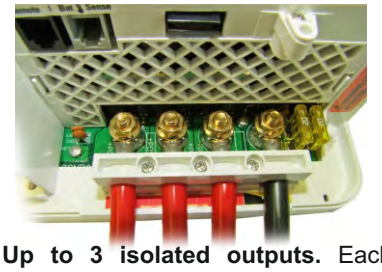
Input voltage range	80-270V 40-70 Hz
Power Factor at 230V	0.976
Efficiency	90.4%
Full load current (110/230V)	9.8/4.6A
Total Harmonic Distortion	2.4% voltage
Total Harmonic Distortion	2.4% current
Ripple noise (R.M.S.)	14mV
Ground leakage	0.5 mA

Generator/ mains power (watts)

12V	20A	approx 400W
12V	30A	approx 500W
12V	40A	approx 700W
12V	50A	approx 850W
12V	60A	approx 1000W
24V	20A	approx 700W
24V	30A	approx 1000W

32V / 36V / 48V approx 1000W

voltmeter accuracy	+/- 1%
Ammeter accuracy	+/- 1%



Up to 3 isolated outputs. Each output can carry the full current rating of the charger. However, not all simultaneously - the total current is the charger's rating.

Cables not included, Sterling can provide cabling. Custom lengths and thicknesses.

Additional Specification

–USA California Energy Commision (CEC) listed: CEC regulation stipulates that the charger is only on when necessary. This reduces AC power consumption and lowers operational costs while maintaining healthy batteries. (default setting is on, CEC can be turned off)

–Synchronized Rectification: Mosfet technology, increases overall efficiency over diode based chargers by approximately 8 percentage points.

– Automatic Desulphation / Equalization mode: 7-10 days cycle with anti-stratification program to keep batteries rejuvenated.

– Voltage + Current LED display: 2 LED matrix displays. Left side is the voltmeter and the right side is the ammeter.

– Performance monitoring LED bar: An LED display to show what rate the charger is operating at.

– Redundant safety system: In event of failure, the processor provides another system to shut off device, doubling security. The primary emergency backup is digital, the secondary system is analogue both are totally independent of one other.

– High temperature ambient operation rating: Most chargers are only continuously rated at 20 deg C (if even) this unit is rated at continuous operation at 40 deg C ambient.

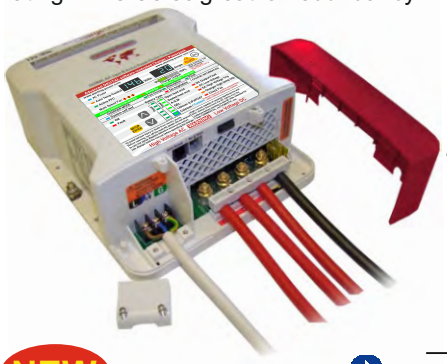
– Multiple speed fan control: This reduces unnecessary fan noise experienced by the customer, even though the new extreme efficiency reduces the need for fans. At high ambient temperatures (40-50 deg C), however, fans would still be required to ensure operation.

– Thermostatically controlled force draft cooling: To ensure that when the cooling is actually required the noise level is a low as possible for the environmental and power conditions.

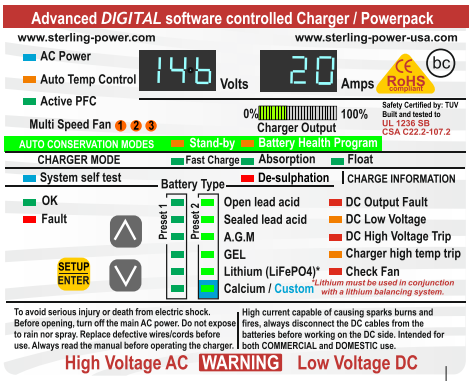
– The printed circuit boards are conformal coated: For high humidity and salt air operations.

– % power reduction: To allow unit to work with restricted power available (available on local control or remote control panel).

– Multiple chargers: Multiple chargers can be put in parallel to increase current rating. This is also great for redundancy.



Basic wired setup
cables not included
photo courtesy of MDSbattery.co.uk



32 LED display. The front panel provides information regarding:

- Voltmeter
- Ammeter
- Charger output display bar
- Charging statuses
- Battery chemistry select,
- Temperatures
- Voltage warnings.
- Multi Lingual over lay labels available.

Optional Remote Control

- Charging voltage (V) and charge current (A)
- Multi lingual - English, Spanish, French, German and Italian.
- Charging stage and duration
- Configured Battery Type
- Temperature of the charger
- Temperature of the battery
- Error Messages
- 110 x 68 x 20 mm
- 5 meters of cabling
- Remote housing - surface / recess / flush mounted

Pro Charge Ultra

DC (V)	Rating (A)	Weight (KG)	L x W x D mm	Code
12V	10A	2	260 x 215 x 90	PCU1210
12V	20A	2	260 x 215 x 90	PCU1220
12V	30A	2	260 x 215 x 90	PCU1230
12V	40A	2	260 x 215 x 90	PCU1240
12V	50A	3	315 x 215 x 90	PCU1250
12V	60A	3	315 x 215 x 90	PCU1260
24V	20A	2	260 x 215 x 90	PCU2420
24V	30A	3	315 x 215 x 90	PCU2430
32V	20A	3	315 x 215 x 90	PCU3220
36V *	20A	3	315 x 215 x 90	PCU3620*
48V *	15A	3	315 x 215 x 90	PCU4815*
Remote w / 5m cable		0.05	110 x 68 x 20	PCUR
German main label overlay sticker				PCUG
French main label overlay sticker				PCUF
Spanish main label overlay sticker				PCUS

*** Built to UL1236 and CEC but not listed**
Multi language main label overlay sticker

NEW

Introducing the Bluetooth App

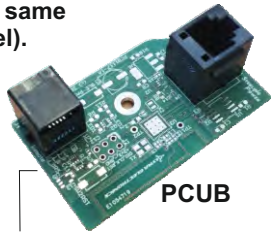
This app shall be available for both Android and Apple devices.

-Not released yet-

App appearances may change

Bluetooth App shall display the same features as the PCUR (remote panel).

- Voltmeter
- Ammeter
- Charger output display bar
- Charging statuses
- Battery chemistry select
- Temperatures



PCUB

A device, designed to be retrofitted to the remote port on the PCU, shall need to be bought and installed. This device has been designed to live inside the housing of the PCU (under the gray or red end cap). It can be stuck or bolted onto the bulk head that separates the AC and DC sides of the charger. Double tape or a screw through.

Pro Charge Ultra Lite

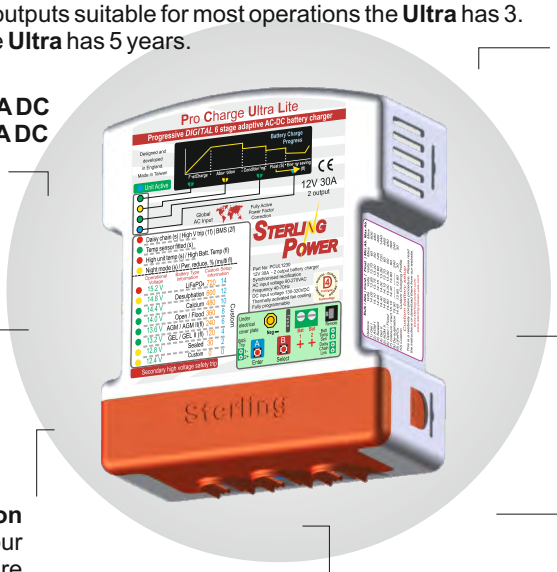
Multi stage | Fully Active PFC | Custom Charge Selection | 12V 20A / 30A | 2 outputs

This new **Pro charge Ultra Lite** is aimed at the budget sensitive market. So; what are the key differences between the **Ultra** and the **Ultra Lite**?:

1) The **Ultra** is larger due to it meeting the ABYC 40 Deg C+ high ambient temperature performance standards.
2) The **Lite** has an operational range in the 20 Deg C+ (a more common standard for non ABYC), thus, in a smaller body.
3) The **Lite** displays less information on the front panel but still a lot more than its competitors .
4) Although built to UL standards, including fire resistant plastics etc, the **Lite** is NOT UL certified.
5) The **Lite** is not CEC certified, the **Ultra** is.
6) The **Lite** has temperature compensation, however, unlike the **Ultra**, the sensor is optional.
7) Cost, the **Lite** is lower cost
8) Outputs: The **Lite** has a max of 2 outputs suitable for most operations the **Ultra** has 3.
9) PCU Lite has 2 years warranty the **Ultra** has 5 years.

230VAC performance is 30A DC | 20A DC
110VAC performance is 27A DC | 20A DC
unit temperature dependent.

Truly Global Application and perfect for generators. The **Pro Charge Ultra Lite** shall work at **AC voltages (80-270VAC and 40-70Hz) and DC voltages (130-320V).**



One of the world's most efficient chargers. This is courtesy of **active power factor correction** (PFC 0.99-1). and synchronised rectification The **Pro Charge Ultra Lite** is rated at over 90% efficient. PFC is an extremely important feature, please refer to **Page 59**. Non-active PFC chargers are approximately 65% efficient.

Comprehensive 18 LED front panel. The dual function nature of the LED panel shall also provide voltage information, charging profile statuses and warning statuses.

Power Pack / Power Supply. This charger works effortlessly as a power supply to DC loads to prevent depletion of your battery capacity.

Automatic Desulphation mode: 7-10 days cycle with anti-stratification program to keep batteries rejuvenated.

Battery temperature sensing compensation and remote control (optional). Unlike our competitors this unit has battery temperature sensing and remote control port. The sensor and remote are optional extras. Temp sensor below (TSAY).

Larger voltage / current requirements? The Pro Charge Ultra Lite series can be put in series or parallel with other Pro Charge Ultras. This is possible due to the chargers digital dynamic charging ability.

1/2 current mode. Reduce the charger's current by 50%.

Battery daisy chain multiple battery high temperature system shutdown (optional) . Where large numbers of batteries are being used our digital temperature sensor can be linked in a chain to shutdown the battery charger in event of any battery's exceeding 50 deg C.

Float Modes and Energy Saving Modes. You can force this charger into float mode (mid ~13V) intermittently or indefinitely. You can also put the charger into an Energy Saving mode. This mode saves energy by dropping the output voltage down to the voltage of a full battery (~12.8V). This ensures the battery is full and that the charger acts as a power supply when a load is applied to the battery.

Perfect for generator use. Due to its active PFC tolerance of AC input it shall run from crude sine wave forms - typical from generators.

Power Reduction you can set the charger to run at lower power outputs to complement a wider range of generators and low shore power connections.

8 pre-programmed charging profiles for AGM, Gel, sealed / flooded, calcium and lithium ($LiFePO_4$) batteries. We also include a **fully customizable** option to allow the user to programme their own profile via the front panel.

Standards
Tested to CE standards
EN61000-3-2
EN61000-3-3
EN55014-1
EN 55014-2
EN60335-2-29
EN ISO 13297
EN 6100-3-2 Class

Input voltage range	80-270V 40-70 Hz
Power Factor at 230V	0.976
Efficiency	94.4%
Total Harmonic Distortion	2.4% voltage
Total Harmonic Distortion	2.4% current
Ripple noise (rms)	14mV
Ground leakage	0.5 mA

Generator / mains power (watts)
12V 30A approx 500W
12V 20A approx 350W
voltmeter accuracy +/- 1%

Night time setting allows the unit to run at ½ power for a fixed time frame so the fan noise is reduced to a minimum.

Remote Control (Optional) LPCUR
Displays: Voltage / Warnings / Temperatures
Can be used as an independent voltmeter measuring input battery voltage and output battery voltage.
- Force the unit to 1/2 current limit.
- Reset both remote and charger.
- 54mm diameter.

Outputs	DC (V)	Rating (A)	Weight (Kg)	L x W x D mm	Code
2	12V	30A	2.5	198 x 158 x 70	**LPCU1230**
Remote w / 10m cable			0.05	54mm diameter	**LPCUR**
Battery Temp sensor analogue					**TSAY**
50 Deg C = 122 Deg F Digital Temp Sensor DAISY CHAIN					**TSD50**
60 Deg C = 140 Deg F Digital Temp Sensor DAISY CHAIN					**TSD60**

Ultra Portable 7A

Multi stage | Multi Chemistry | Adjustable current | 12V and 6V operation

Sterling has now integrated its high end algorithms for each battery type into a small and portable charger. With the Ultra Portable you get the same great performance from a portable charger as you would with a fixed charger. You can select between 6 different battery chemistries, between 6V and 12V and between 3A | 5A | 7A charging rate. The portable charger can be wall mounted thanks to the wall bracket on the back of the charger.

Multi battery chemistry selection. Similar chargers only have one battery charging profile which fits all. This new portable charger has 6 preset charging profile (see table below) for each battery type, ensuring a fast and safe charging rate.

Multi information LCD screen for maximum information including:
Nominal charging voltage (6V / 12V).
Real charging voltage.
Charging current.
Battery chemistry select.
Fault information.

6 stage battery charging.
View graph below.

UK + Europe + USA
plug models available

Automatic or manual start up. Charger shall start charging automatically after 30 seconds. This is incase you have cut the power or have had a power cut and the charger shall resume charging and maintaining the batteries.

12V and 6V operation. The charger senses which voltage the batteries are at and adjust the charging profiles accordingly.

6 Stage Charging Curve - Charger set to Number 2 (14.4V bulk and 13.8V float). The charger shall pick up if a load is applied to the battery and re-establish boost mode.

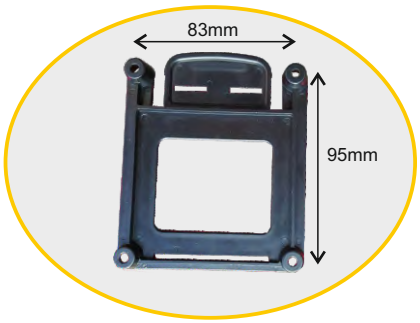
The charger shall also remember which charging profile and current rating you have set and shall automatically resort to this setting when you turn the power on.

4 Faults on display.
Fault 1 = High output voltage
Fault 2 = High unit temp alarm
Fault 3 = Reverse Polarity
Fault 4 = Open circuit / Batt disconnected

Power reduction capability:
The unit can be set to 3A | 5A | 7A

Can bring 12V batteries that have gone down as low as 4V back up to 12V.

Attractive packaging ideal for retail.



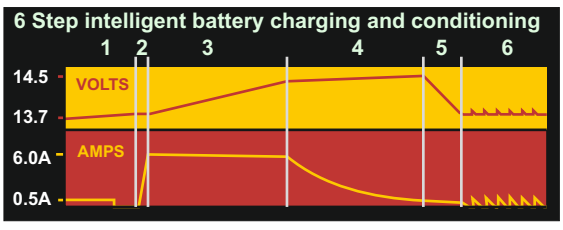
Wall mounting storage bracket (included) on reverse side of the charger. Quick release for portable operation. Measurements denote centre of hole to hole.

Chemistry Charging Profiles

	Number	1	2 (default)	3	4	5	6*
12V	Profile	Gel I / AGM I	Sealed LA / Lithium	AGM II	Open LA	Calcium	Desulph
	Absorption (V)	14.1	14.4	14.6	14.8	15.1	15.5
	Float (V)	13.4	13.8	13.7	13.3	13.6	N/A

	Number	1	2 (default)	3	4	5	6*
6V	Profile	Gel I / AGM I	Sealed LA / Lithium	AGM II	Open LA	Calcium	Desulph
	Absorption (V)	7.1	7.2	7.3	7.4	7.6	7.8
	Float (V)	6.7	6.9	6.9	6.7	6.8	N/A

Input voltage range	190-250V 50 Hz
Power Factor at 230V	0.90
AC current at 230V	~0.6A
Efficiency	~80%
Total Harmonic Distortion	2.4% voltage
Total Harmonic Distortion	2.4% current
Ripple noise (R.M.S.)	14mV
Ground leakage	0.5 mA
voltmeter accuracy	+/- 1%



Ultra Portable 6V / 12V | 7A charger				
Region	**V DC**	**L x W x D (mm)**	**Weight Kg**	**Code**
British	6V | 12V	190 x 115 x 70	0.5	B127
Europe	6V | 12V	190 x 115 x 70	0.5	E127
USA	6V | 12V	190 x 115 x 70	0.5	A127

Portable Battery Chargers (1A-6A)

Schuko

*Each model is available in **E**uro (Schuko) or **B**ritish socket, simply select **E** or **B** in the SKU*

British 

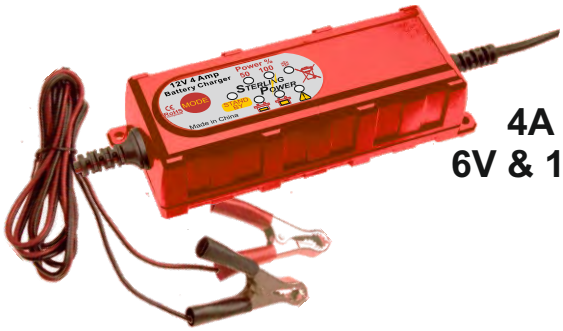
6A
6V & 12V

5A
6V & 12V

Portable micro processor controlled chargers 230V AC 50Hz only					
Voltage(V)	Current (A)	Plug	L x W x D mm	Weight Kg	Code
6V & 12V	6A	British	180 x 100 x 55	0.7	B126
6V & 12V	6A	Euro	180 x 100 x 55	0.62	E126

Portable micro processor controlled chargers 230V AC 50Hz only					
Voltage(V)	Current (A)	Plug	L x W x D mm	Weight Kg	Code
6V & 12V	5A	British	180 x 100 x 55	0.62	B125
6V & 12V	5A	Euro	180 x 100 x 55	0.62	E125

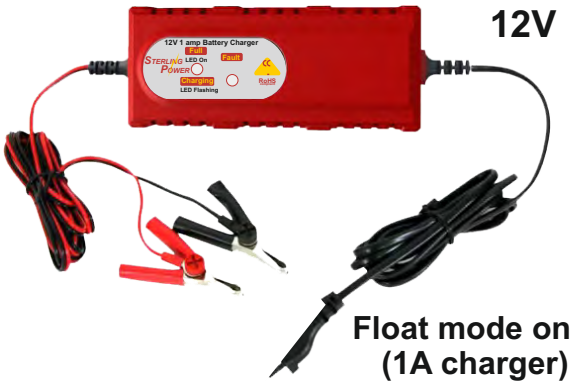
3A
6V & 12V



4A
6V & 12V

Portable micro processor controlled chargers 230V AC 50Hz only					
Voltage(V)	Current (A)	Plug	L x W x D mm	Weight Kg	Code
6V & 12V	3A	British	170 x 110 x 55	0.45	B123
6V & 12V	3A	Euro	170 x 110 x 55	0.45	E123

Portable micro processor controlled chargers 230V AC 50Hz only					
Voltage(V)	Current (A)	Plug	L x W x D mm	Weight Kg	Code
6V & 12V	4A	British	160 x 60 x 45	0.6	B124
6V & 12V	4A	Euro	160 x 60 x 45	0.6	E124



1A
12V

Float mode only (1A charger)

Portable Battery Chargers

	1A	3A	4A	5A	6A
LED display, indicates charging status and faults.	●	●	●	●	●
Fault diagnostic system.		●	●	●	●
Over heat / short-circuit / reverse polarity protection.	●	●	●	●	●
Low input voltage and over voltage protection.	●	●	●	●	●
Suitable for use with long term float / storage of battery.	●	●	●	●	●
Constant 13.9V charge.	●	●			
Automatic 4 stage charging profiles.			●	●	●
Adjustable charging current rates.		●	●	●	●
Battery rejuvenation, pulse function (de-sulphation cycle).		●	●	●	●
Insulated charging clips.	●	●	●	●	●
Suitable for outdoor use in dry conditions only.		●	●	●	●
Battery Ah capacity rating, up to 120Ah:	●	●	●	●	●
Choice of either British or European plugs	●	●	●	●	●
Auto start up	●	●	●	●	●
6V (and 12V charging) battery charging options		●		●	●

Portable slow charge battery maintainer 230V AC 50 Hz only					
Voltage(V)	Current (A)	Plug	L x W x D mm	Weight Kg	Code
12V	1A	British	135 x 50 x 40	0.35	B121
12V	1A	Euro	135 x 50 x 40	0.35	E121

Portable Global Smart Charger

12V-5A / 24V-2.5A

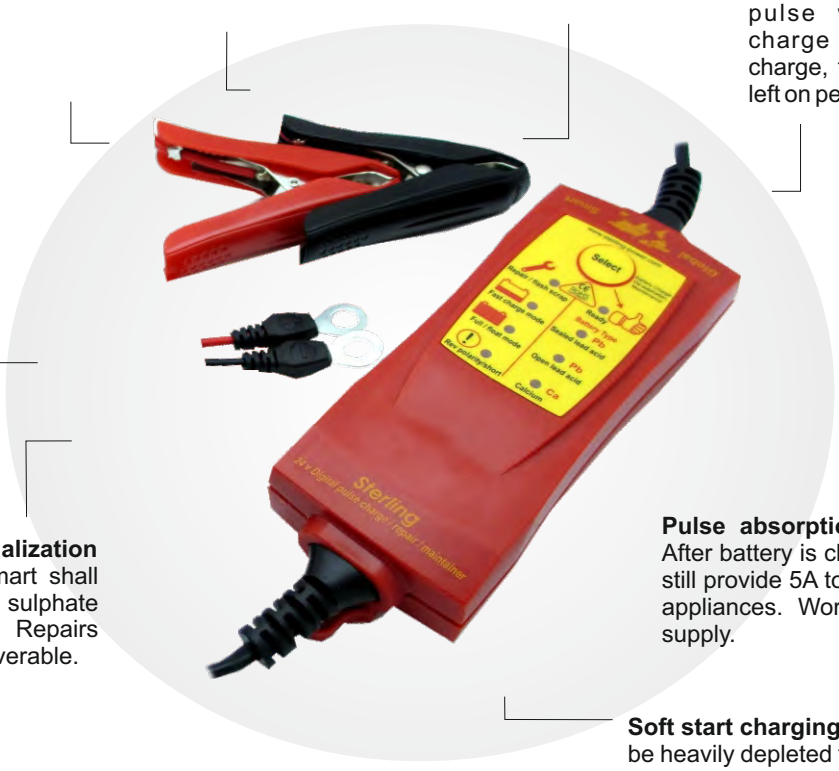
Battery chemistry selection - worldwide voltage operation

Universal AC Input (100V to 240V 47Hz-64Hz): can be used anywhere in the world, truly global charging.

Battery chemistry selection. Suitable for all types of lead acid batteries: Wet, GEL, AGM, Calcium.

Three charge modes. When the battery is found to be suitable for a charge then the charger will bulk charge, then pulse width absorption charge and finally float charge, the unit can then be left on permanently.

50% power reduction mode: For small batteries, under 30Ah.



Defective battery identification. The charger detects if the battery is beyond repair.

Simple 3 touch screen selections with intuitive iconic LED indications.

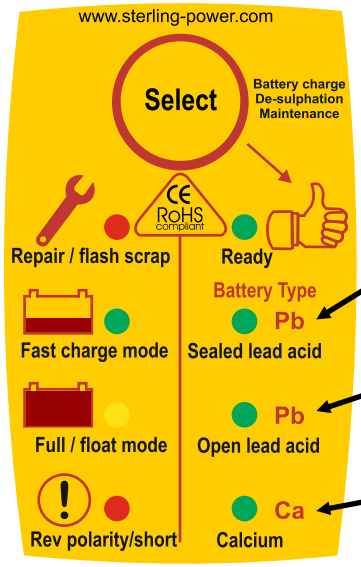
Desulphation / Equalization mode. The Global Smart shall attempt to pulse the sulphate plates to clean them. Repairs can only happen if recoverable.

Pulse absorption and float charge. After battery is charged the charger can still provide 5A to run on board lighting / appliances. Works as a small power supply.

Soft start charging. If the battery is found to be heavily depleted then the smart charger will start at a low pulse current until the battery has reached a level where it can then absorb the full charge power.

Polycarbonate casting.

Water resistant **IP45 waterproof**.



Easy to select battery type voltages x 2 for 24V unit.

Sealed lead acid
Gel and AGM
Max 14.4V charge
Float 13.5V

Open lead acid
14.8V charge
Float 13.5V

Calcium
15.1V charge
Float 13.5V

Protections:

- Overload protection
- Short circuit
- Over temperature
- Reverse polarity
- Thermal Control - regulates in hot conditions
- 50% power reduction for batteries under 30Ah
- Cold weather charging - higher voltage charge.
- No Connection Spark - charger only on when connected

Approvals: EN60335 EN55014

Global Smart portable battery charger

Plug type	Input (VAC)	Output (VDC)	Current (A)	Weight Kg	Code
British	110-230V	12V	5A	0.4	GS125B
Euro	110-230V	12V	5A	0.4	GS125E
USA	110-230V	12V	5A	0.4	GS125A
British	110-230V	24V	2.5A	0.4	GS243B
Euro	110-230V	24V	2.5A	0.4	GS243E
USA	110-230V	24V	2.5A	0.4	GS243A

Battery Chemistry Module

Multi Chemistry Multi Output charging device 12V/60A / 24V/30A

The Battery Chemistry Module (BCM) is a retro fit device designed to be installed on the output of a current limiting multi output battery charger to allow the battery charger to have independent chemistry selection on each output . More and more so, individuals are having different battery styles/chemistry and different voltage scales (12V and/or 24V) all within their DC system. Due to this quagmire, the BCM is the solution to allow one battery charger to charge different battery chemistries at different voltage scales and at their correct charging profile. So, the BCM can essentially turn a very simple battery charger into a multi output, multi chemistry advanced battery charger with other inherent advantages.

Most cost effective method for multi chemistry multi output battery charging on the market.

Converts a single output charger into a multi output charger using multiple units.

Simple to install. Simply connect the input of the BCM to an output of a current limiting battery charger and connect the output of the BCM to the battery bank.

Converts a multi output charger into a multi chemistry multi output charger.

4 Models:
12V - 12V
12V - 24V
24V - 24V
24V - 12V

Remote voltage compensation. To do away with voltage drop across long cables there is a feature which allows the charger to compensate for a voltage drop up to about 1 volt .

8 selectable charging profiles. AGM, Gel, sealed lead acid, flooded lead acid and lithium. There is also a desulphation mode.

Do not install on a charger where the current exceeds the BCM's rating.

Battery temperature compensation and high battery temperature trip.

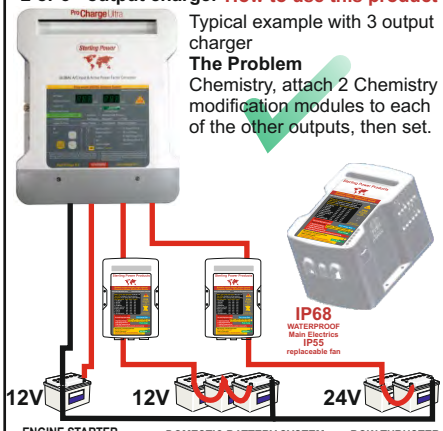
Battery Chemistry Module or a Battery to Battery Charger?
We are frequently asked this question.
For an in depth reason to choose the BCM over the **Battery to Battery Charger**. We recommend that you refer to our FAQ page. Here we shall discuss the main differences, essentially the benefits of current limiting in the versatility of the battery to battery charger. The BCM is a more cost effective method when connected to a battery charger.

Additional Specifications:
1) 6 LEDs projecting over 20 individual charge and warning information events.
2) Fail safe, reverts to basic charge function - about 1V less in event of a failure. Product can be replaced/repaired at convenience.
3) High battery temperature "daisy chain" trip (optional). Every battery can be monitored and the unit switched off. This can be done in the event of a battery overheating - causing high battery temperature problem.
4) Ignition fed generator to link in with sterling Pro Split R alternator splitter, this allows the output to be further split.

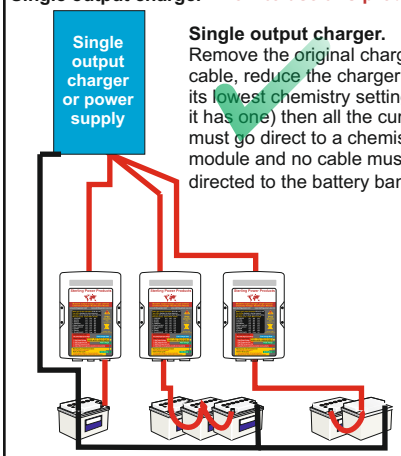
Typical Wiring Examples

2 or 3+ output charger How to use this product

Typical example with 3 output charger
The Problem
Chemistry, attach 2 Chemistry modification modules to each of the other outputs, then set.

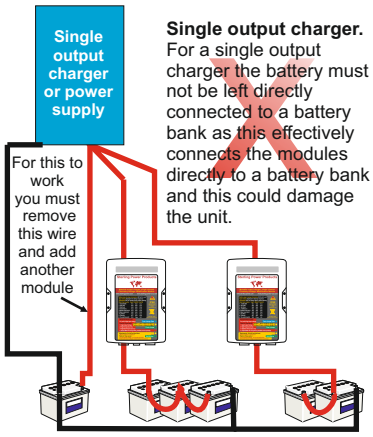


Single output charger How to use this product



Single output charger.
Remove the original charger cable, reduce the charger to its lowest chemistry setting (if it has one) then all the current must go direct to a chemistry module and no cable must be directed to the battery bank.

How **NOT** to use this product



Single output charger.
For a single output charger the battery must not be left directly connected to a battery bank as this effectively connects the modules directly to a battery bank and this could damage the unit.

Code	Description
BCM1260	12V-12V up to 60A Max 60A 12V charger
BCM2430	24V-24V up to 30A Max 30A 24V charger
BCM1224	12V-24V 10A (at 24V) Current limiting any 12V charger
TSD50	50 deg C = 122 deg F Digital temp sensor
TSD60	60 deg C = 140 deg F Digital temp sensor
TSD70	70 deg C = 158 deg F Digital temp sensor
TSD80	80 deg C = 176 deg F Digital temp sensor
BCMR	Battery Chemistry remote control plus 10m cable

Temperature Sensor
1 x battery analogue temperature sensor
TSAY

Optional Remote Control
cut hole: 54 mm
total diameter: 68 mm
thread depth: 44 mm
BCMR

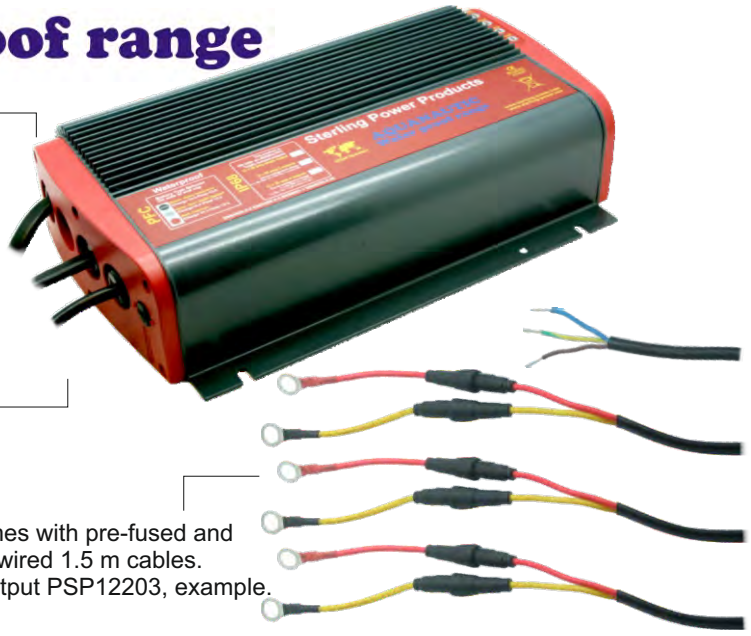
Waterproof Battery Chargers

*8-20A 1-3 fully isolated output Waterproof **Digital** Battery Chargers with fully **Active PFC***

AQUANAUTIC

Waterproof range

The Waterproof **Aquanautic** battery charger is a fully sealed, fully waterproof and fully dust ingress/proof built to IP67 marine grade battery charger. The charger features **active power factor correction**, this allows for global **AC input (90VAC-270VAC)** and improved efficiency.



– Power Factor Corrected (active) 0.99-1 (PFC)
– 90VAC-270VAC input (47-70Hz).
– Extruded aluminum housing.
– Pre-fused and pre-wired with 1.5 m cable.
– waterproof built to IP67 standard.
– Adaptive charging, ensuring maximum charge in the batteries.
– LED power and charge indicators.
– Pre-fused and gold plated terminals.
– Up to 3 isolated outputs.
– Preset charging profiles AGM, Gel, flooded lead acid.
– Available in **8A / 12A / 20A**
– Available in **12V / 24V / 36V**
– Dynamic thermal output control, reduces power rather than over heats.

Comes with pre-fused and pre-wired 1.5 m cables.
3 output PSP12203, example.

Waterproof Aquanautic PFC 110-230V Active Power Factor Correction					
Output (V)	Output(s)	Current (A)	L x W x D mm	Weight Kg	Code
12V	1	8A	180 x 170 x 65	2.5	PSP1281
12V & 24V	2	8A at 12V 4A at 24V	180 x 170 x 65	2.5	PSP1282
12V	1	12A	200 x 170 x 65	2.8	PSP12121
12V & 24V	2	12A at 12V 6A at 24V	200 x 170 x 65	2.8	PSP12122
12V	1	20A/12V	290 x 170 x 65	3.8	PSP12201
12V & 24V	2	20A/12V 10A/24V	290 x 170 x 65	3	PSP12202
12V & 24V& 36V	3	20A/12V 10A/24V 6A/36V	290 x 170 x 65	3.2	PSP12203

Pro Sport Range

– 12V 5A and 24V 5A (10A at 12V - 2 output)
– Moulded plastic case.
– Ignition Protected
– Epoxy filled, IP68 proofing.
– Adaptive charging, ensuring maximum charge in the batteries.
– LED power and charge indicators.
– Pre-fused and pre-wired with 1.5 m cable.
– Up to 3 fully isolated outputs.
– Dynamic thermal output control, reduces power rather than over heats.

The Pro Sport 5/5
12V/10A and 24V/5A

The Pro Sport 5 and 5/5
A range of battery chargers designed to IP68 standard. Available in 5A and 10A models. 12V and 24V.

Pro Sport 5 and 5/5 Waterproof Battery Charger 230V AC 50 Hz only					
Output (V)	Current (A)	Output(s)	L x W x D mm	Weight Kg	Code
12V	5A	1	75 X 150 X 65	2.5	PS125
12V & 24V	12V(2 x 5A) / 12V(1 x 10A) or 24V (1 x 5A)	2	230 X 130 X 90	3.5	PS1255

Coming 2021

Intelligent Switch Panel

Programmable 12V / 24V DC 90A

Euro 6 mode (Default): This setting prevents the engine battery from ever being connected to the auxiliary battery at the same time when the vehicle engine is on.

Voltage sensitive battery protection controls for each battery bank: the low voltages (algorithm controlled) are set to protect the auxiliary and starter battery from excessive discharge. The voltage settings are set differently for the two batteries as they are doing different jobs. These preset voltages are adjustable.

OEM lock This allows the panel to be locked to prevent any system critical functions from being played with by a operator.

Back feed from aux battery to starter battery (bi-directional) (optional). If you have solar installed or a battery charger on your auxiliary battery system and you wish for the surplus power to back feed to your starter battery to keep it topped up when the engine is off and the vehicle is in storage. You must NOT use this mode for mixed lithium / lead acid batteries.

USB Charger specification. 18W, Quick Charge 3. For fast charging modern mobile devices.

Vehicle charging from engine alternator for Non Euro 6 / non-regen. braking vehicle mode (relay charging). For older non euro 6 Regen. braking vehicles the system's internal relay charging system will operate. WARNING - the rating of the relay is 90A.

Switches operational only under certain conditions. I.e. via an interlock. I.e. you may only want some switches active on side light operation only or some other signal interlock, this can be programmed to each switch.

Surface mount or flush fitting

Surface mount panel in picture is light gray.
For photo purposes only, real colour black (supplied in kit).
Front legends in photo, are interchangeable stickers.

LCD multi coloured back light

Extended time function default off : in the event of the auxiliary battery becoming too low this system can automatically crossover from the auxiliary battery system and get power from the vehicle's start battery. This will, also, automatically engage the engine starter battery protection (set higher than the auxiliary battery setting).

Last position memory (on / off) default on: If the panel loses power and power is then reinstated (power cycled) - when power is re-engaged the panel shall, for safety, reasons revert to all switches off as soon as start up. Alternatively, the panel can be set to remember the previous switch setting and revert to this setting on restart.

12V - 24V auto select, this unit will automatically select 12V or 24V control and change the battery settings.

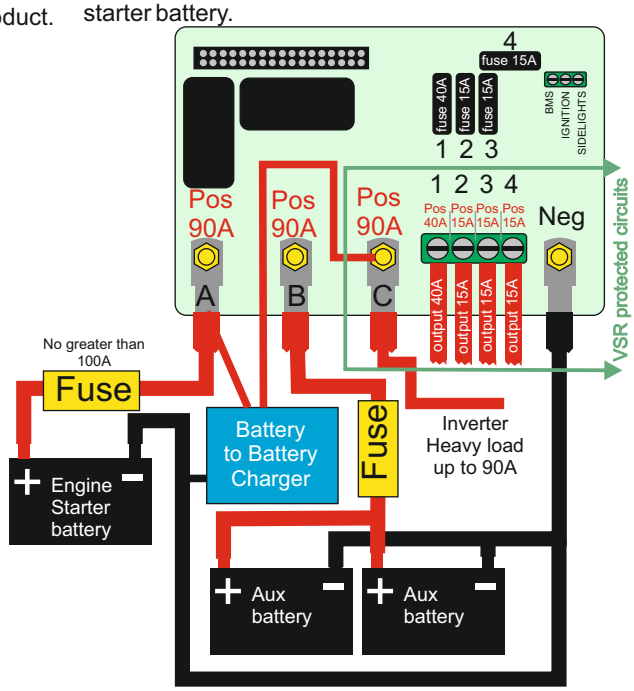
Overload protection, this unit monitors the current to and from the auxiliary battery - whilst on auxiliary battery system only. If this exceeds 90A the unit will auto disconnect the auxiliary battery, to protect the product.

Meter readings, this units digital display will show Volts - Amps - and **Ah Counting showing state off charge and consumption from the auxiliary battery** and voltages from the engine starter battery.

Pre-printed (with unit) interchangeable labels

Bilge Pump	Water Pump	Light Beacons 1	Anchor lights	STERLING POWER	
Sockets	Navigation	Light Beacons 2	Rear Lights	Auxiliary 2	Zone 1
Fridge	Running Lights	Auxiliary 1	Spot Light	Lights	Zone 2

Optional Extra: Remote control switch panel with 10, cable. Flush or surface mount.



Intelligent Switch Panel - 150W x 136H x 65D (mm) **Part no: ISP90A**
Remote panel with 10m cable - 90W x20D (mm) **Part no: ISPR**

High Voltage Protection Device

6KW direct, unlimited power indirect

Built to IP66

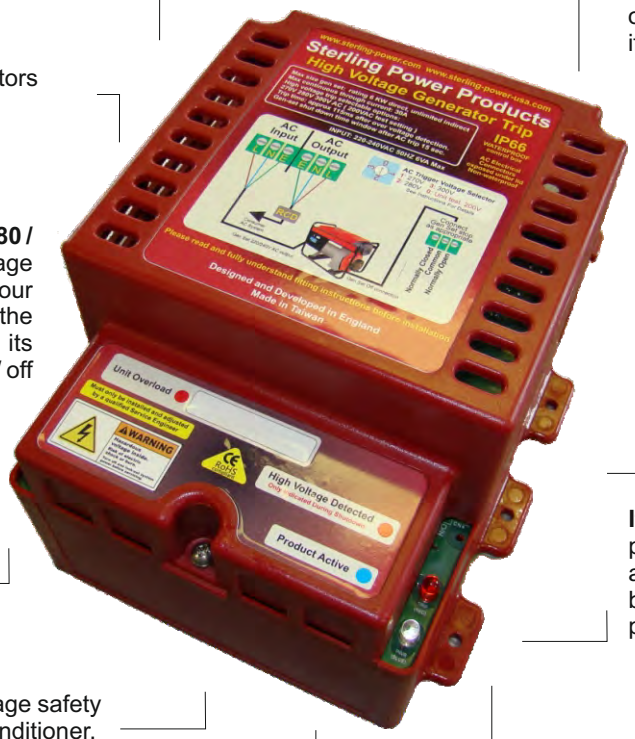
Sterling's High Voltage Protection Device (HVPD) is designed to protect any 230V AC supply such as: Generators / inverters / mains from incorrect voltage destruction. At some marinas / parks the mains supply voltage is wrong and this can result in the governor speed control / regulator / voltage controller failing (sticking). This can result in a dangerous situation for the operator and can destroy AC equipment. The HVPD is designed to prevent such destructions.

Suitable for generators and inverters up to 6KW with direct connection.

Suitable for generators and inverters of **any size** with indirect connection.

Automatically sends signal to shut down the actual generator or isolate the inverter, if required.

LED fault indicators



Test setting to confirm all is working.

unit can be adjusted to 270 / 280 / 300V AC. Detects a high voltage which can be adjusted to your requirements depending on the generator being used and its standard reaction to normal on / off loading.

Extra signal port for telemetry system information transmission if required.

Reacts within 0.12 seconds to that set voltage.

If generator is over 6KW the power is disconnected by sending an external signal to a larger breaker to disconnect the main power.

Please note, this is a high voltage safety trip and not an in line voltage conditioner.

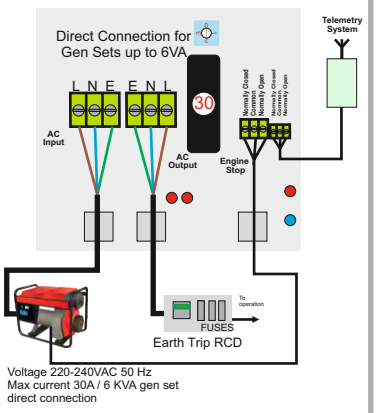
The unit makes no attempt to smooth or fix the high voltage. It is designed to assume a catastrophic failure and switch everything it can off as fast as possible. This reduces / prevents the ensuing damage from that high voltage failure.

If the generator is under 6KW the power is disconnected directly by switching its own 30A power breaker.

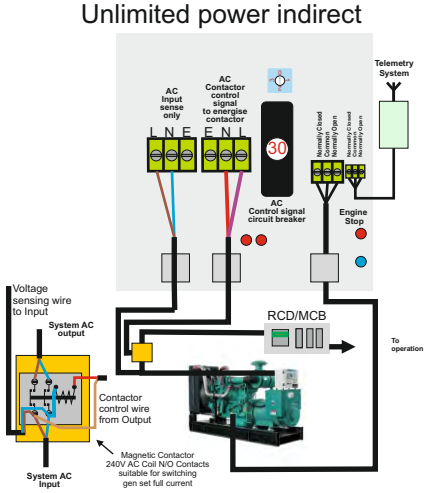
30A overload trip (for internal wiring protection)

SKU	Size L x W x D mm	Weight KG
HVPD	155 x 170 x 118	1.0

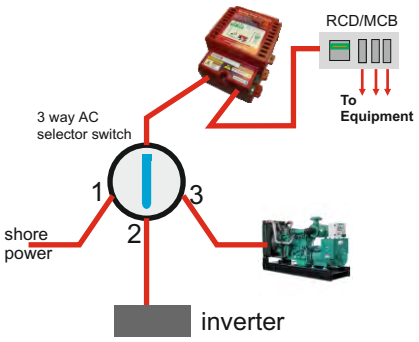
6KVA direct protection



Unlimited power indirect



Multi product use covering Gen sets / Inverters / Mains



Power Distribution Panel

NEW 2021

Campervan power panel

Sterling Power's campervan power distribution panel (PDP) is a vastly superior, bespoke alternative to the existing power distribution panel currently in the campervan market. Below are 40 features that the Sterling PDP does that sets it way ahead and beyond any of its rivals. It has been designed intentionally to be swapped in place for existing panels of its type. Therefore, the PDP has been designed to have a certain familiarity for those who have always used them. For a conventional system to come close to competing with this product, and offer as many features as this system does, would cost many hundreds of pounds extra in product and installation costs - making this product very low cost and great value.

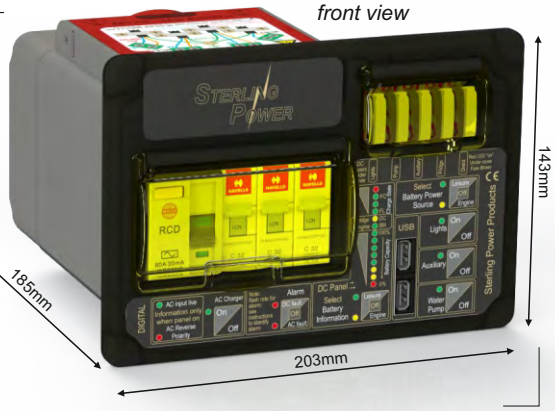
1. Charger is EU legal, complies with all the normal standards. EN 61000-3-2- Limits for harmonic current emissions.

2. The unit is E marked (type approved) so can be installed in new OEM vehicles.

3. Auxiliary and engine battery charger even with panel off but charger on.

4. Approximately 50% less volume than competitors' alternatives, with a smaller footprint.

front view



5. Fan cooled, thermatic controlled multi speed fan to ensure max performance even in the hottest conditions with minimum noise.

6. Digital / software controlled system for simple use yet offering complex operations.

7. A 1A trickle charge for engine starter battery for long term maintenance to compensate for long term starter battery drain.

8. Fully active PFC battery charger which means even with a very poor / low input voltage charger performance remains at peak performance. Charger works down to 170VAC ensuring your unit works perfectly whilst others on site shall fail.

9. Remote battery charging sense, allows the battery charger to read the voltage on the battery banks allowing the voltage drop on the charging cables to the compensate for

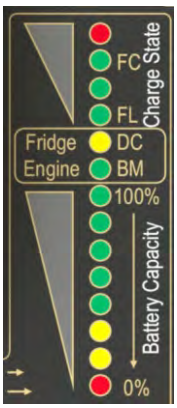
10. Screw covers on front of unit to ensure smooth cosmetic finish.

11. Easy replacement / upgrade access to charger and other parts.

12. All plastic parts are made with fire retardant plastic.

13. Shore power to DC Battery charger (digital progressive) 4 stage constant current. With battery type selection including: AGM, GEL, sealed lead acid, open lead acid and lithium profiles.

Battery Capacity Meter



14. Battery charger flashes on start up to show which battery type

15. Battery capacity meter changes with battery type selected for charger.

16. Solid green lights (LEDs) change to slow flashing when under battery power to conserve energy.

17. More positive and stable fuse and contact covers.

USB x 2 ports 5V / 2.0A

18. Option to allow power sockets and USB connectors to remain active with vehicle on the move.

Ideal for charging phones / tablets when moving or stationary.

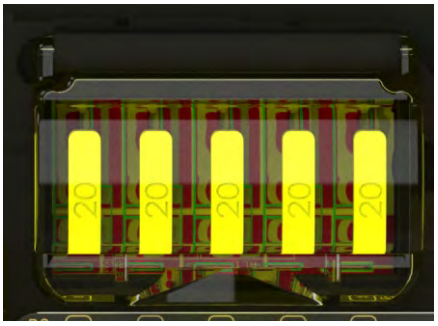
19. Optional battery temperature sensor for temperature compensation.

panel view

Membrane switches allowing for simple easy use of product.

Fault lights flash at multiple rates to indicate different system faults to aid fast and accurate fault diagnoses.

DC fuse box containing 5 fuses



20. DC fuses LEDs to show if a fuse is blown and which one has failed.

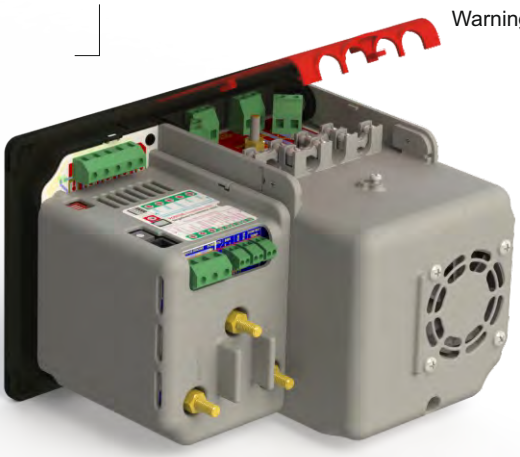
Euro 6 Compatibilty

21. Default is set for Euro 6 (regenerative braking vehicles). As such, there is no charge through the unit - all auxiliary battery charging is via a **Battery to Battery Charger** – you select the power you require (20A, 30A, 60A, 120A option).

Option 2, engage the split charge voltage sensitive relay charge system, this allows conventional charging via a relay to take place. There is an 80A charge circuit and will engage and disengage according to the vehicle's engine being on / off. This is suitable for all non-Euro 6 / non-smart alternator systems.

22. Aux battery protection, DC latching relay also acts as a low battery voltage disconnect to prevent total depletion and destruction of the domestic battery, trigger point is 10.5V (depending on battery type). Lights switch off then on for a few times to show there is a problem. Auto re-engages when charger or vehicle engine's started. Can be safely overridden by pushing button for 10 seconds. This removes all the control and allows the battery to totally deplete. Warning given in instruction about battery destruction.

23. Use of more expensive latching relays over conventional relays. No relevant power consumption in control panel when on.



rear view

24. No un tethered AC cables in AC system. This reduces any problems caused by cables vibrating and breaking.

25. Engine relay battery start protect. This setting for engine battery connection can cut off at say 12.3V which should also allow safe use of the engine battery and also allows the engine to start.

26. BMS lithium remote charger shutdown option.

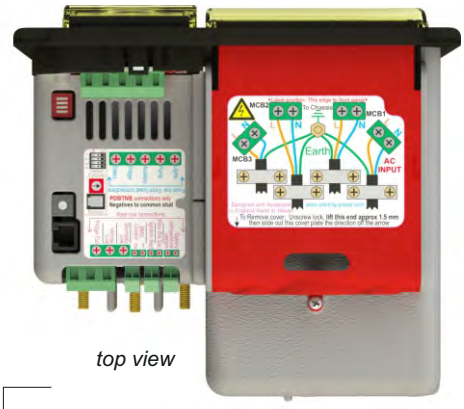
27. We have provisioned for larger cable connectors to allow for greater charging performance. We use 6mm bolts to allow for larger cables. This improves performance over the thin wiring looms that have conventionally been installed - that are appalling.

28. Feed can be supplied to show engine on; i.e. to engage the fridge. This can be done electronically (voltage sensing) without an extra ignition cable. LED on front to show fridge on DC mode i.e. engine running and relay engaged. Hard wired option allows fridge to run direct from DC.

29. DC input cables can be easily shared with Sterling's Battery to Battery Charger or split charge relay.

30. Total isolation between DC and AC on back of unit up to AC/DC safety standards.

31. Clear concise wiring instructions on the product.



top view

32. We do cater for users who wish to combine starter and auxiliary batteries through the distribution box via internal latching relays – discussed overleaf. Generally recommended for those with older (non-Euro 6 engine).

33. No battery charging directed through the distribution box on default . Separation of charge and discharge aspects. This is a massive advantage. It is absolutely impossible to make a 1 box fits all charging solutions. For example, you may have a large alternator but only a small auxiliary battery bank requiring low current charge. Or, you may have a large auxiliary bank with a large direct power requirement for inverters which may require high direct current capability from the alternator. This can be easily achieved by upping the power performance of the charging device independent of the panel.

34. You may have different battery types and require special charging regimes. You may have an older engine or a modern Euro 6+ with regenerative braking. All of these require different charging regimes. It is more effective to not allow any vehicle charge ability through the control which would invariably diminish the vehicle's ability for charging the auxiliary battery system. It is much better to treat the vehicle's charging aspect separate from the discharge system so this can be correctly installed.

35. Solar surplus power will also be diverted to the starter battery. This is automatically activated by voltage on domestic battery bank so it works in the event of solar charge on domestic battery bank. It has a 3 minute time delay to allow battery to battery charger to fail (not start up). It engages at 13.1V. It is best positioned on the DC board rather than the battery charger board. This is shown on the main panel as EBM, Engine Battery Maintainer.

Power Distribution Panel			
Device	**L x W x D (mm)**	**Weight Kg**	**Code**
12V PDP	203 x 143 x 185	2	PDP
Temperature Sensor		N/A	TSAY

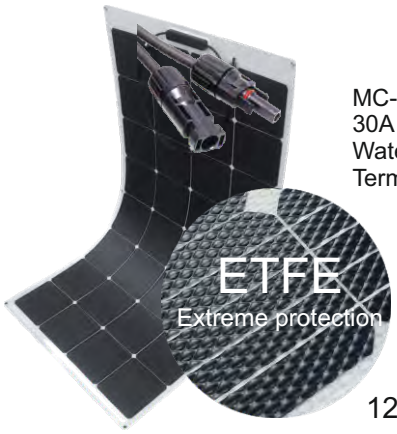
Semi-Flexible Solar Panels

ETFE 18W | 55W | 120W | 150W

These 12V flexible solar panel's first layer is made of Ethylene tetrafluoroethylene (ETFE). ETFE is a much more expensive and higher quality material than Polyethylene terephthalate (PET). Also, the monocrystalline cell has a higher conversion efficiency (20.4%). With up to 140mm bending height these solar panels can be used in many different fields - RV, Camper, Bus, Car, Boat + Yachts.

The Multi-grid panel is less affected by cracks, has more interconnection points, power generation features can resist cell cracks or fractures and reduce crack failures. This means you can walk on it and has a high level of durability.

18W Model



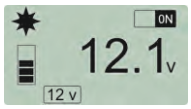
120W model

Solar Accessories
Page 61-63

Electrical Characteristics:				
Maximum power(Pmax)	18W	55W	120W	150W
Voltage at Pmax(Vmp)	17.2V	17.2V	17.8V	17.8V
Current at Pmax(Imp)	0.96	2.94	6.42	8.02
Open circuit voltage(Voc)	18V	18V	20.4V	20.6V
Cells Efficiency(%)	20.30%	20.30%	20.40%	20.40%
The maximum system voltage	100VDC(IEC)	100VDC(IEC)	100VDC(IEC)	100VDC(IEC)
Power temperature coefficient / Deg C	-0.39%	-0.39%	-0.39%	-0.39%
Voltage temperature coefficient / Deg C	-0.30%	-0.30%	-0.30%	-0.30%
Current temperature coefficient / Deg C	0.04%	0.04%	0.04%	0.04%
Output power tolerance	±3%	±3%	±3%	±3%
NOCT	45±2DegC	45±2DegC	45±2DegC	45±2DegC
Data under standard testing conditions(STC):1000W/M²; 1.5AM				
Specifications:				
Contruction	surface ETFE EVA backboard TPT	surface ETFE EVA backboard TPT	surface ETFE EVA backboard TPT	surface ETFE EVA backboard TPT
Module dimension	410 x 285 x 3 mm	580 x 540 x 3mm	1200 x 540 x 3mm	1460 x 540 x 3mm
Weight	0.9Kg	1.4KG	2.3KG	3.0KG
No.of cells and connections	4*8	4*8	4*8	4*8
Maximum bending arch height	15mm	30mm	80mm	140mm
CODE	**SP18**	**SP55**	**SP120**	**SP150**

MPPT Solar Regulators

10A - 50A MPPT solar regulators with WIFI and App



display on 30A/50A models.

50A MPPT

- Performance category MPPT
- Max in solar input power 600W - 1200W
- System voltage 12 V / 24 / 36 / 48V
- Display and information LCD panel
- USB output 5V / 2.4A
- Load output 50A max
- Operation Wi Fi
- Dimension 238 x 177 x 73 mm
- Weight 2.3kg

30A MPPT

- Performance category MPPT
- Max in solar input power 360W - 800W+
- System voltage 12V / 24V auto detect
- Display and information LCD panel
- USB output 5V / 2.4A
- Load output 30A max
- Operation Wi Fi
- Dimension 238 x 177 x 63 mm
- Weight 1.5kg

10A PWM

- Performance category PWM
- Max in solar input power 150W - 300W
- System voltage 12V / 24V
- Display 3 LEDS to display operation and faults
- USB output 5V / 2.4 A
- Load output 10A max
- Dimension 125 x 81 x 30 mm
- Weight 160 g

WiFi available on 30A/50A models

It displays:

- PV current (A)
- Battery voltage (V)
- Load (W)

Type	Dimensions (mm)	Rating	weight	WiFi	Code
10A PWM	125 x 81 x 30	10A rated	160g	No	PWM10
30A MPPT	240 x 178 x 63	30A rated	1.5kg	Yes	MPPT30
50A MPPT	240 x 178 x 73	50A rated	2.3kg	Yes	MPPT50

E marked.
Suitable for
OEM fitting.

Bb1230 Solar

EURO 6

Non Waterproof 12V 30A BB + 350W Integrated MPPT Solar Regulator

The new combined battery to battery charger and solar regulator maximises the operational usage of the battery to battery charger. It does this by adding a solar operation to the product both when the vehicle is in motion and moreover when the vehicle is stationary. This makes it, in effect, also a free 350W solar regulator when the vehicle is stationary. This product has all the benefits of the standard 30A Battery to Battery charger when the engine is on, offering a variety of inputs for your systems to be maintained.

Activation mode:
This unit's Battery to Battery charging aspect is activated by an ignition feed from the vehicle's engine. This gives the battery to battery charger aspect priority over the solar. However, note the full solar power is still utilised.
This is the only operational mode for this product and is suitable for Euro 6+ vehicles

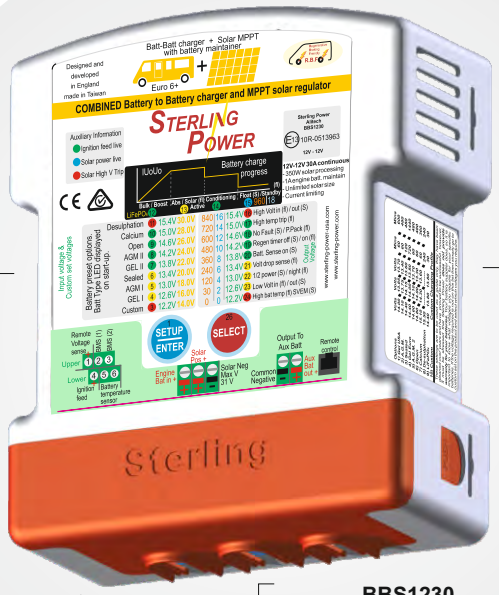
Solar mode:
When the ignition feed is switched off (ie the vehicle engine is off) the battery to battery charger shuts down. The solar aspect takes over. This allows for a more efficient solar program to be run instead of the 2 aspects running at the same time.

No risk of starter battery discharge. Current is NOT taken from the input battery and given to the output battery except during the low voltage timer for regenerative braking mode. This time frame can be increased in length or brought down to 0 seconds.

Very simple to install. No Electronic Control Unit (ECU) issues. No complex wiring. No Warranty issues. Fully prepared for smart alternators (**Regenerative braking**). 95% of installations are simply out of the box with no setup .

4 stage battery charging. The B2B charges batteries between 5-20 times faster than a stand alone alternator.

OEM lock: the unit can be locked by the installer to prevent tampering and misuse of the product by the operators. By locking the BB, you secure all previous settings in place and prevent subsequent tampering.



BBS1230

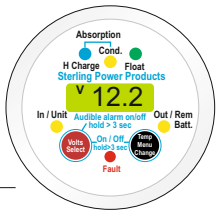
9 preset battery chemistry options including AGM, LiFePO4, Gel, flooded and sealed lead acid.

Customizable profile - choose your your own charging profile on the front panel.

Boost / Reduce Charging. The B2Bs ensure batteries get the correct charging profile irrespective of high or low input voltages.

Unit is current limiting, prevents large current flow and requires less cable thickness. Adjustable current limit. The current limit can be reduced to 50%.

Night time setting allows the unit to run at ½ power so the fan noise is kept down.

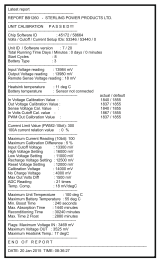


Safety features:
- Fire retardant plastic housing
- no screws to corrode
- thermal power reduction
- multi stage fan cooling

Dynamic thermal charging, the charging voltage fluctuates based on the temperature of the sensor (included ->).

1 x temperature sensor (TSAY) included in all units.

Test Report Sheet
Each product gets uniquely tested and a report is generated. This unique test report is present inside this box. You must keep this test sheet in this box and keep this box safe. This sheet should be present when the charger is being warranted.



Remote Control (Optional) BBURC
Displays: Voltage / Warnings / Temperatures.
Can be used as an independent voltmeter measuring input battery voltage and output battery voltage.
Can remotely modify the Batt. the Batt. Charger:
- Force the unit to float
- Force the unit to 1/2 current limit
- Force the unit to standby
- Force the unit off
- Force the unit to Night Mode
- Reset both Remote and Charger

54mm diameter

DC V (in)	DC V (out)	Current (A)	Weight (Kg)	L x W x D mm	Code
12V	12V	30A input 350W solar	1.5	190 x 160 x 50	BBS1230

E marked.
Suitable for OEM fitting. E13

Battery to Battery Chargers.

EURO 6

Non Waterproof (Drip Proof IP21)

Sterling's range of Battery to Battery Chargers (B2Bs) has grown significantly over the past few years. Offering a product range in this market un surpassed by anyone in both power and flexibility. This is in an effort to supplement the ever growing demand from the commercial vehicle, recreational vehicle and marine industries. The B2Bs have become extremely popular as they fast charge batteries as you cruise along without the need for complex wiring, touching your alternator, voiding the alternator's warranty and tampering with the electronic control units (ECUs). You can provide the onboard batteries with a fast 4 stage charging profile with a very simple and speedy installation. All of the benefits of advanced charging without any of the draw backs. Simply connect the B2B between the battery being charged and the battery you wish to charge.

2 activation modes:
1) Automatic - Default, operates on input voltage (13.2V / 26.4V on). No ignition feed required. Probably not ideal for Euro 6 vehicles.
2) Ignition feed - apply ignition feed to the charger. This enables the charger to turn on when ignition feed is live. The unit then turns off when ignition turns off. Ideal for Euro 6 vehicles.

Very simple to install. No Electronic Control Unit (ECU) issues. No complex wiring. No Warranty issues. Fully prepared for smart alternators (**Regenerative braking**).

4 stage battery charging. The B2B charges batteries between 5-20 times faster than a stand alone alternator.

Output charging at **12V, 24V, 36V and 48V**. Input voltages at **12V and 24V**. **Up to 800W rating**. Much larger model up to 3000W coming soon.

Safety features:
- 100% fire proof plastic box
- no screws to corrode
- thermal power reduction
- multi stage fan cooling
- ***BMS high and low shutdown***

Dynamic thermal charging, the charging voltage fluctuates based on the temperature of the sensor (included ->).

Unit is current limiting, prevents large current flow and requires less cable thickness.
Adjustable current limit. The current limit can be reduced to 50%.

1 x temperature sensor (TSAY) included in all units.

BB1260 | BB122470 | BB241235 | BB242435 | BB123670 | BB124870

BB1230
BB122430

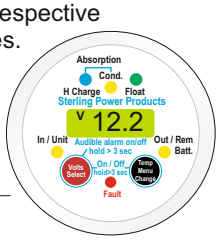
OEM lock: the unit can be locked by the installer to prevent tampering and misuse of the product by the operators. By locking the BB, you secure all previous settings in place and prevent subsequent tampering.

9 preset battery chemistry options including AGM, $LiFePO_4$, Gel, flooded and sealed lead acid.

Customizable profile - choose your your own charging profile on the front panel.

B2B turns on at 13.2V and turns off at 13.0V (x2 for 24V). Thus, does not drain input battery. **With ignition connected, the charger works down to 10.0V (2x for 24V).**

Boost / Reduce Charging. The B2Bs ensure batteries get the correct charging profile irrespective of high or low input voltages.



No risk of starter battery discharge. Current is **NOT** taken from the input battery and given to the output battery except during the low voltage timer for regenerative braking mode. This time frame can be increased in length or brought down to 0 seconds.

Night time setting allows the unit to run at ½ power so the fan noise is kept down.

Remote Control (Optional)
Displays: Voltage / Warnings / Temperatures.
Can be used as an independent voltmeter measuring input battery voltage and output battery voltage.
Can remotely modify the Batt. the Batt. Charger:
- Force the unit to float
- Force the unit to 1/2 current limit
- Force the unit to standby
- Force the unit off
- Force the unit to Night Mode
- Reset both Remote and Charger

54mm diameter

DC V (in)	DC V (out)	Current (A)	Weight (Kg)	L x W x D mm	Code
12V	12V	30A input	1.2	190 x 160 x 50	BB1230
12V NEW	24V	30A input NEW	1.3	190 x 160 x 50	BB122430
12V	12V	60A input	1.4	190 x 160 x 70	BB1260
12V	24V	60A input	1.4	190 x 160 x 70	BB122470
12V	36V	60A input	1.4	190 x 160 x 70	BB123670
12V	48V	60A input	1.4	190 x 160 x 70	BB124870
24V	24V	30A input	1.4	190 x 160 x 70	BB242435
24V	12V	30A input	1.4	190 x 160 x 70	BB241235
24V NEW	48V	30A input NEW	1.4	190 x 160 x 70	BB244830
Remote w/ 10m cable					BBURC

BLUEMOTION ® Trademark of *Volkswagen*

BLUE EFFICIENCY ® Trademark of *Mercedes Benz*

econetic TECHNOLOGY ® Trademark of *Ford*

ecoFLEX ® Trademark of *Vauxhall / Opel*

Pro Batt Ultimate

EURO 6

NEW 2021

IP22 Drip proof

Fire retardant plastics

Universal battery to battery power system

200A / 150A / 100A / 50A | **12V- 12V / 24V-24V / 12V-24V / 24V-12V**

up to **6000W performance (at 24V) and 3000W at 12V**. **Uni and Bi directional Charging**

The high powered & compact Pro Batt Ultimate shall be our flagship battery to battery charger that boasts up to 96% efficiency. It enables 12-12V / 12-24V / 24-24V / 24-12V (with no current reduction) charging. It also allows for charging in both directions Uni / Bi directional. Similarly, it includes a very handy emergency starter button in the event of your vehicle incurring a flat battery - simply press Emergency Start and you'll be on your way. The Bi-directional mode (independently current limited) means you can back charge from your aux system to the starter battery - ideal for things like Solar / Wind / Combi charging. The Ulimate can also be utilised as a simple DC to DC converter - set the desired voltage and you have a power supply.

Many products in one

12V - 12V Batt. to Batt.
12V - 24V Batt. to Batt.
24V - 24V Batt. to Batt.
24V - 12V Batt. to Batt.
Reverse charging (bi-directional)
Emergency start (regulated boost)
DC - DC Converter 0-32V

Preset charging profiles. AGM, Gel, sealed lead acid, calcium flooded lead acid and lithium. There is also a desulphation mode. All presets adhere to a 4 stage charging profile.

Advanced alternator regulator. Benefits including current limiting, with no interaction with the alternator.

Customisable charging profiles. You can set the absorption, conditioning and float voltages to whatever values you wish. The absorption time length can be adjusted as can the absorption time factor.

Bi-directional benefits. If you have a single output battery charger (Combi, for example), solar power and/or wind you almost certainly want to back-feed surplus power to your starter battery. With the Ultimate you can easily achieve this. If you have an AGM starter battery, you can set the Ultimate to charge at the AGM profile. You can ALSO set the maximum current, if you want to limit the back-feed current to 10A, you can!
This reduces battery charging cost and wiring plus installation time and gives multi chemistry charging. You can ALSO set the specific voltage parameters that activates the donor side of the Ultimate to start charging. For example, you can select lithium on one side and lead acid on the other, when lithium is selected all the start and stop parameters will automatically change to favour the battery chemistry, these settings can also be custom set.

5 Activation modes available:

1) Fully automatic, works based on pre-determined on/off voltages at the DC terminals. These are adjustable.
2) Ignition feed with starter battery protection.
3) Ignition feed with no low voltage protection (ideal for Euro 6+ vehicles)
4) Vibration sensing (ideal for Euro 6+ vehicles) - various sensitivity settings. Unit can activate based on vibration when engine starts.
5) Custom set ignition feed - adjustable voltage parameters.

Thermostatically controlled multi-speed fan to ensure continuous full power operation.

OEM lock: the unit can be locked by the installer to prevent tampering and misuse of the product by the operators. By locking the BB, you secure all previous settings in place and prevent subsequent tampering. This still allows the buttons to access the information screens.

Current limit adjustable. Models can be adjusted from between 5A-10A increments in either direction. For example, you could charge your leisure battery at 200A in one direction and opt for a mere 10A back charge to keep the starter topped up.

Multi-coloured back screen lighting which provides further active information. Red as a warning, green and blue shows direction of current flow.

Lithium battery friendly
BMS emergency shutdown interface with an external BMS with auto reset or total lock out ability.

Interlock shutdown circuit to allow a secondary system to shutdown the product remotely.

Bluetooth interface with your smart phone, meaning all features can be programmed and adjusted through your mobile / tablet device. If a mobile isn't to hand, however, most features are still easily accessed just by using the buttons on the user interface of the product.

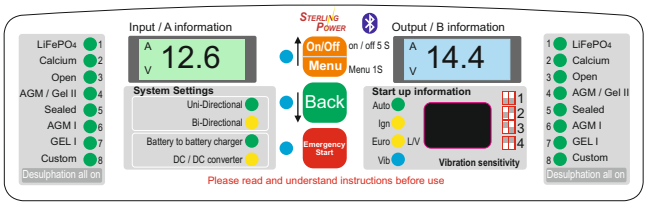
Simple to install. Even thought this product has an eye watering amount of options / custom settings the base product is designed for 90% of operations with no setup required. Simply connect the BB Ultimate between two battery banks. The unit will automatically select the battery voltages and you simply push the agree button and that is it .

Up to 96% efficient

E13

E marked.
Suitable for OEM fitting.

Input and output voltage sense and cable sense capabilities. The unit can detect and compensate for voltage drops in the cable improving your overall product performance. This works for long input runs and long output runs. It also has built in limits and warnings which are able to detect blown fuses, poor wiring and warn accordingly.



DC V (in)	DC V (out)	Current	Weight (Kg)	L x W x D mm	Code
12V | 24V	12V | 24V	50A	2	280 x 203 x 78	BBU50
12V | 24V	12V | 24V	100A	2.5	320 x 203 x 78	BBU100
12V | 24V	12V | 24V	150A	3	360 x 203 x 78	BBU150
12V | 24V	12V | 24V	200A	3.5	400 x 203 x 78	BBU200

2x digital panels showing current and voltage in / out and temperatures of the product. The display refreshes every 5 seconds on a rotational basis so as to preserve power. The buttons on the interface can be used to adjust the operational settings, to which there are many. The interface is also Bluetooth ready. A corresponding APP is also in the pipeline.

Temperature Sensor
1 x battery analogue temperature sensor (included)

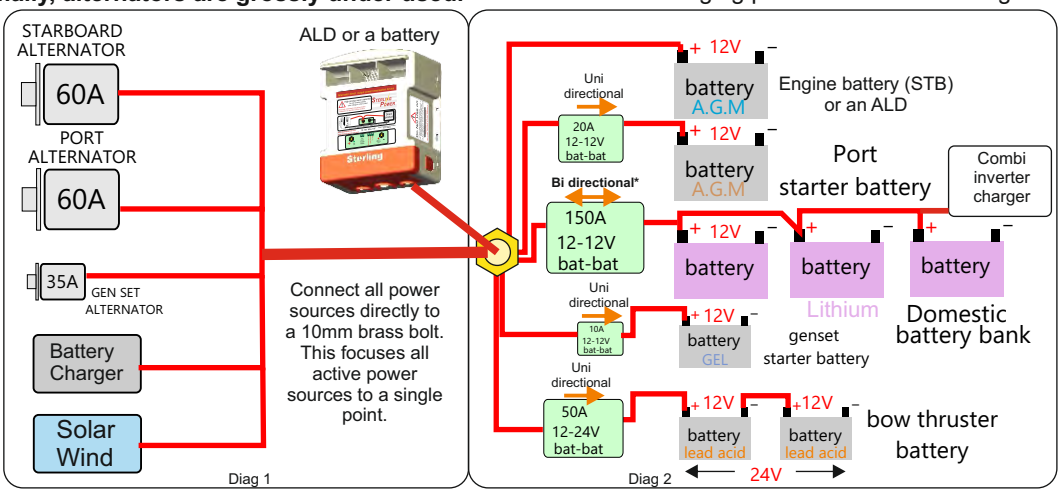
Point Charging - simplify your DC setup

Most boats have lots of sources of power but are terribly complex, disorganised and do not make the most of the available power - leaving batteries poorly charged and power production sources under utilised . Point charging is a concept designed to simplify and improve your DC charging system. It enables an array of battery types (Sealed lead acid, open, AGM, Gel, Lithium) to be charged at their correct charging voltage and current and at the same time reducing cable runs and the duplication off expensive charging devices.

The concept revolves around a single point, a brass bolt. All of the available charging sources such as alternators, gen set, battery chargers, solar / wind are all directed to this one bolt. Likewise, all of the demand side of the DC systems are connected to this bolt. The devices that isolate and regulate both the voltage and current to these batteries are the battery to battery chargers (depicted in green, below).

Power production side
Harness full potential from your alternators
Normally, alternators are grossly under used.

Power consumption side
Charge your battery banks at the correct charging profile and current rating.



Please note all of the different battery types and different voltages levels (12V | 24V). What we are demonstrating is that with point charging and battery to battery chargers you can charge any battery type at any charging voltage. You simply need to rate the battery to battery charger for the desired effect. The flexibility is endless. For battery banks that require high levels of charge simply use a large rated charger. For batteries that simply need topping up, use a small rated charger.

Bi-directional*

Our Pro Batt Ultimate battery to battery charger can charge in both directions. This function is ideal for use on a domestic battery bank. If you have an inverter / charger (Combi) connected to the domestic battery and you wish for the Combi's charger to charge all of the other banks on DC system. It can be set to charge the domestic first, then to activate the batt-batt charger to direct current to all of the other batteries. A neat, additional benefit, would be to jump start a flat starter battery from your domestic battery, to get your engine running.

Advantages of Point Charging:

1) Saves money on cables. 2) Bidirectional operation allows one AC to DC charger with one output to charge your entire system. This allows different voltages and currents to be used either way. 3) Make most use of available charging systems. 4) Allows for mix and match charging for different battery types at known currents and accurate charging voltages. 5) Enables use of a basic battery charger / power supply to maintain entire back as the BBs do the regulating. 6) No down sides, infinitely flexible. 6) In event of starter battery failure you can " jump start" / charging your starter from any aux / domestic / house / bow thruster battery bank .

Using Battery to Battery Charger (BBs) for modern Marine ECU controlled Engines

Bbs are ideal for modern DC setups that have: Engines with ECUs, large domestic battery banks or lithium batteries. Tampering with the connections between the alternator and the starter battery is a no no. The BB range enables high levels of charging performance by installation between batteries (keeping the ECU / warranty happy). The BBs, due to their current limit capability, also reign in the potential of the alternator. We hear stories of lithium batteries causing alternators to over heat and fail due to lithium's rapacity for absorbing current. The BBs can be aptly rated to 20-30% lower than the nominal rating of the alternator to allow the alternator to run at only 70-80% maximum capability - prolonging the alternator's lifespan. The current limit can be set to a different setting (reduced) for the return flow in bi directional mode

Many of the benefits of point charging (above) can be used here to illustrate the advantages of installing the BBs. They include: Correct battery charging voltages and currents. This ensures the batteries are charged to their fullest extend. Smaller cable sizes, keeping costs down - you only need to rate the cable based on the current rating of the BB. Bi-directional charging, ideal for 1 output chargers (Combis) that are directed at your domestic battery and you wish to charge your entire DC system.
Similarly, long cables have a voltage drop across them, the BBs have sensors on the input AND output that enables voltages to be compensated for to ensure the correct voltage **at your batteries**. Also, for jump starting / charging your starter battery in an emergency. Likewise, due to simplicity, there is minimal installation time and very simple to fault find.

Batt - Batt Waterproof

12V 60A-120A Ip66 DC/DC chargers

E 24

Waterproof (built to) IP66 models. These units have the benefit of being epoxy potted so that the charger is sealed off from water and dirt ingress. The cooling fan is not sealed and is rated at IP55, the fan is designed to be easily replaced in the event of major immersion .

The default mode, which is Automatic Regenerative Braking Friendly, does not require an ignition feed to operate. It works on input voltage and timing algorithms (These values can be customised on the unit). This is ideal for most setups as ignition feeds are getting increasingly less common and it makes this unit very simple to install.

9 preset battery chemistry options including AGM, $LiFePO_4$, Gel, flooded and sealed lead acid.

60A and 120A models.
Only in 12V. Features are similar to that of the non-waterproof models.

120A

60A

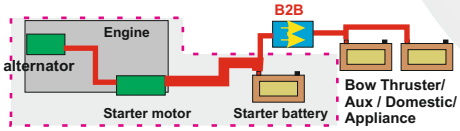
Very simple to install. No Electronic Control Unit (ECU) issues. No complex wiring. No Warranty issues. Fully prepared for smart alternators (**Regenerative braking**).

Current Limit Adjustment current limit can be reduced in increments off 10% using remote control only

9 pre-programmed charging profiles for AGM, Gel, sealed/flooded and calcium batteries and desulphation modes.

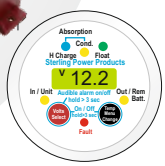
Dynamic thermal charging, the charging voltage fluctuates based on the temperature of the sensor.

Regenerative braking and **manual override** ability.



Simple Wiring Diagram. Illustration to show the most common B2B setup. Whether, for charging bow thrusters banks on boats or for charging domestic banks on RVs or commercial vehicles.

Safety features:
- 100% fire proof plastic box
- no screws to corrode
- thermal power reduction
- multi stage fan cooling



Remote Control (optional)

E marked. Suitable for OEM fitting.
BBW1260
BBW12120

1 x Temperature sensor included

Input DC	Output DC	Current (A)	L x W x D mm	Weight	Code
12V	12V	60A input	145 x 110 x 120	3 Kg	BBW1260
12V	12V	120A input	170 x 130 x 125	3.5 Kg	BBW12120
Remote control			54mm diameter		BBRCN

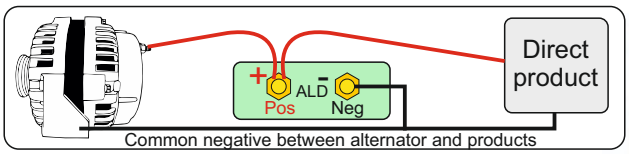
12V **A**lternator direct output power **L**inearisation **D**evice (ALD)

17.5V - 35V 70 F

Total alternator control. Certain applications require current and voltage control directly from the alternator's output - lithium battery charging, for example. This is not straight forward. The problem is that an alternator produces a half wave, non filtered wave form. This is a poor quality output and could not be used directly into any normal equipment without using a battery as a buffer. Failure to do this will destroying the equipment. In addition, lithium batteries require a shut off system so at any time the alternator could become unloaded fast which would destroy the alternator. This is prevented under normal use as an alternator is always connected to a battery. The battery absorbs all the spikes to make a relatively smooth linear power supply. The battery is crucial to achieving this smoothness and also allows the alternator to be unloaded without destroying the alternator.

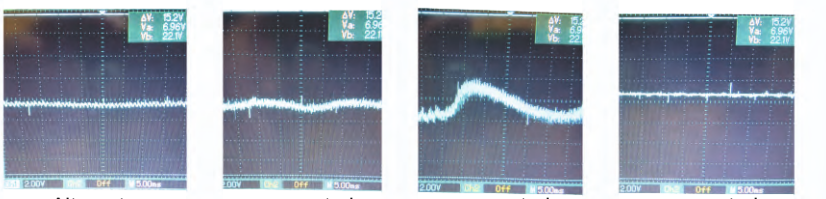
The solution. The ALD fits directly onto the alternator's output. The ALD absorbs the large spikes from the alternator's generation system and also offers itself as a buffer to absorb the alternator's power during electrically unfriendly events that occur during lithium charging. This product is essential if alternators are used directly onto Alternator to Battery Charger or Battery to Battery Charger without being attached to a starter battery.

Do not use with Euro 5/6 engines



Numerous benefits over a normal 12V starter battery? The ALD is smaller and lighter than a regular starting battery. Batteries also need maintaining, they gas, they may over charge and they do not like being transported - the ALD does not suffer from any of these issues. The ALD also acts as a very prominent alternator protection device, sheltering your alternator from any harmful back spikes.

Alternator output wave form



Alternator connected to a battery

connected to a power product at 30A no battery

connected to a power product at 60A no battery

connected to a power product at 60A plus ALD device

DC	L x W x D mm	Weight	Code
12V	190 x 160 x 70	1 Kg	ALD12500
24V	190 x 160 x 70	1 Kg	ALD24250

NEW 2021

Waterproof Battery to Battery

12V | 24V | 36V | 48V @ 400W and 800W

IP67 rated charger /main body | IP56 rated fan external (replaceable)

With solar option

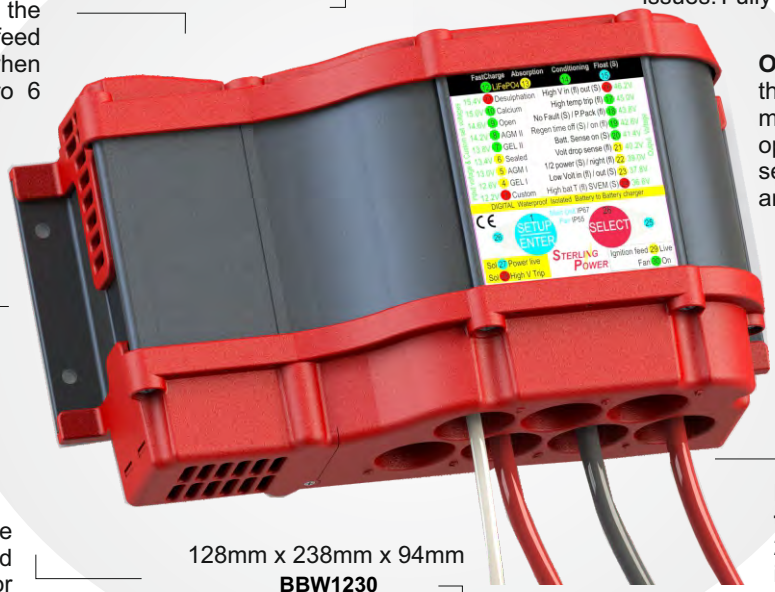
Sterling's new range of waterproof Battery to Battery Chargers (B2Bs) can now offer all the programmability and flexibility of the BB Ultra range in a new waterproof package. This new range comes pre-wired and is primarily aimed at the outdoor market. The unique design enables high power use at a range of temperatures and still allows the product to perform well beyond the normal non cooled product. The external placement of the fan (IP56 waterproof) allows it to be safely destroyed in the event of a full product immersion. In this situation, the product will continue to work, however, it will lack the advanced cooling. On the extremely rare occasion this happens the fan can easily and cheaply be replaced. In the unlikely event of a fan failure the product will still work, only reducing to the performance to that of a non fan cooled product.

2 activation modes:
1) Automatic - Default, operates on input voltage (13.2V / 26.4V on). No ignition feed required. Probably not ideal for Euro 6 vehicles.
2) Ignition feed - apply ignition feed to the charger. This enables the charger to turn on when ignition feed is live. The unit then turns off when ignition turns off. Ideal for Euro 6 vehicles.

The default mode, which is Automatic Regenerative Braking Friendly, does not require an ignition feed to operate. It works on input voltage and timing algorithms (These values can be customised on the unit). This is ideal for most setups as ignition feeds are getting increasingly hard to find on modern vehicles, this new unit is therefore simple to install.

Very simple to install. No Electronic Control Unit (ECU) issues. No complex wiring. No Warranty issues. Fully prepared for smart alternators

Output charging at **12V, 24V, 36V and 48V**. Input voltages at **12V and 24V**. **Up to 800W rating**. Much larger model up to 3000W coming soon.



128mm x 238mm x 94mm
BBW1230

OEM lock: the unit can be locked by the installer to prevent tampering and misuse of the product by the operators. By locking the BB, you secure all previous settings in place and prevent subsequent tampering.

9 preset battery chemistry options including AGM, $LiFePO_4$, Gel, flooded and sealed lead acid.

Customizable profile - choose your your own charging profile on the front panel.

B2B turns on at 13.2V and turns off at 13.0V (x2 for 24V). Thus, does not drain input battery. **With ignition connected, the charger works down to 10.0V (2x for 24V).**

Safety features:
- 100% fire proof plastic box
- no screws to corrode
- thermal power reduction
- multi stage fan cooling
- ***BMS high and low shutdown***

Dynamic thermal charging, the charging voltage fluctuates based on the temperature of the sensor (included ->).

Unit is current limiting, prevents large current flow and requires less cable thickness.
Adjustable current limit. The current limit can be reduced to 50%.

No risk of starter battery discharge. Current is **NOT** taken from the input battery and given to the output battery except during the low voltage timer for regenerative braking mode. This time frame can be increased in length or brought down to 0 seconds.

Pre-wired and pre-fused.
All models 1.5m of pre-wired / pre-fuse with 8 mm ring terminals input, output and negative. Also, 2m of loose negative cable provided - ring terminal 8mm.
400W model is pre fused on cables
800W model is not pre fused but require fuses separately.

1 x temperature sensor included for battery terminal 8 mm hole

E marked.
Suitable for OEM fitting.

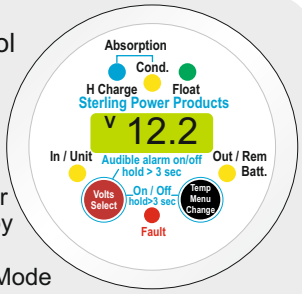
E13

EURO 6

Lithium compatible

4 stage battery charging. The B2B charges batteries between 5-20 times faster than a stand alone alternator.

Optional:
Remote control
with 10 m cable
54 mm Diameter



Functions
Force to float
Force 1/2 power
Force to standby
Force unit off
Force to Night Mode
Reset both Remote and Charger
Part No: **BBURC**

DC V (in)	DC V (out)	Current (A)	Weight (Kg)	L x W x D mm	Code
12V	12V	30A input	3.5	128 x 238 x 94	BBW1230
12V	24V	30A input	3.5	128 x 238 x 94	BBW122430
24V	12V	15A input	3.5	128 x 238 x 94	BBW241215
24V	24V	15A input	3.5	128 x 238 x 94	BBW241215
12V +solar+	12V	30A input	3.5	168 x 238 x 94	BBWS1230
12V	36V	30A input	3.5	128 x 238 x 94	BBW123630
12V	48V	30A input	3.5	128 x 238 x 94	BBW124830

400W models

DC V (in)	DC V (out)	Current (A)	Weight (Kg)	L x W x D mm	Code
12V	12V	60A-70A input	4	163 x 238 x 94	BBW1265
12V	24V	60A-70A input	4	163 x 238 x 94	BBW122465
24V	12V	30A input	4	163 x 238 x 94	BBW241230
24V	24V	30A input	4	163 x 238 x 94	BBW2430
12V +solar+	12V	60A-70A input	4	183 x 238 x 94	BBWS1265
12V	36V	60A-70A input	4	163 x 238 x 94	BBW123665
12V	48V	60A-70A input	4	163 x 238 x 94	BBW124865

800W models

Specs to be confirmed nearer the time of release

WILDSIDE - Batt-Batt Caravan

Allows leisure battery charging & fridge operation whilst towing.
*Allows fridge to operate from leisure battery when un-hooked and away from a camp site (**WILDSIDE**).*
Plug + Play can be installed with existing cabling.

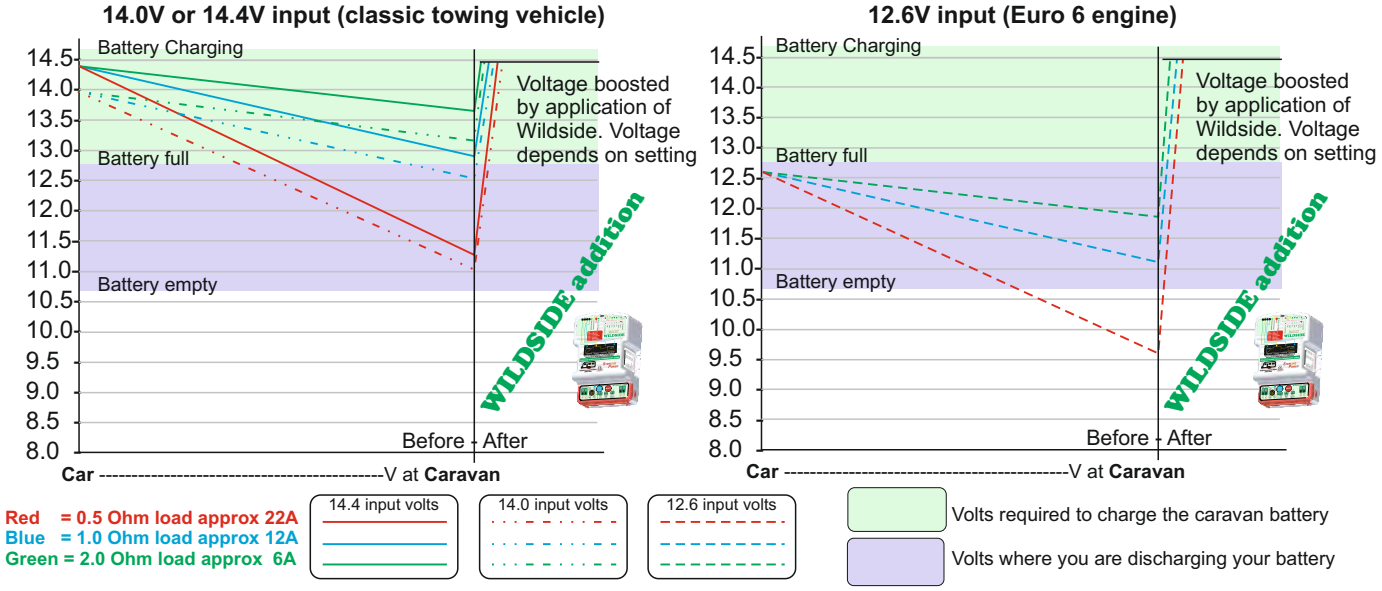
The Existing Problem

Electrical requirements on board caravans are ever increasing. When at campsites this is no problem thanks to AC hook-up. However, if you tour and do not utilize these hook-ups and you find your fridge and mover not operating and your leisure battery not charging, this article is worth reading.

Still to this day, charging whilst towing is terrible. This is because the on board charging systems have not modernised by keeping up with on board electrical demands NOR by dealing with the contemporary peculiarities associated with Euro 6 engines on modern towing vehicles. Fridges do not run, leisure batteries do not charge, movers are ineffective etc. This is because the towing vehicle's alternator's voltage is dropping below the enabling threshold of the fridge and below that required to charge your batteries (read page 15). At current we have seen vast voltage drops down the cable.

Considering modern towing vehicles have large alternators it is shocking that their potential is not utilized.

Graph shows voltage drop across 2.5mm2 copper cable. The cable is 8m of positive cable and 8m of negative.



Graph analysis

The above is the best case you can expect. We have used good cables, no relays, no chassis negatives, no fuses and the connections were good. The green is the voltage where you need to be to have any chance of charging your caravan battery. The higher up the green area the better your battery charge will be. The purple is your battery depletion, the lower down you are on this the more power you have used and so the more "empty" your battery shall become.

The **Euro 6** graph is the most telling - when the alternator is not doing anything (12.6V) the chart begins within the purple (discharge section). However, the voltage which ends up in the caravan under load is so far below this due to the voltage drops in the cables. This means your fridge is receiving a very low voltages and it simply cannot operate at this low voltage. The simple conclusion is that, under Euro 6 conditions, you shall not be able to run your fridge nor charge your batteries. Therefore, there is actually no point having this connection.

The classic towing graph (14V), displays a modicum of battery charging at very low current. However, at moderate or high load, absolutely no battery charging shall take place.

WILDSIDE addition

Adding Sterling's **WILDSIDE** takes this low input voltage and current but transforms the power from useless low voltage to a higher battery charging voltage (4 stage). Even at 05 Ohm load (22A) at ~9V the **WILDSIDE** unit boosts the output to the 14.4V charging regime for your typical leisure battery. By providing this boost not only do the leisure batteries get charged at an infinitely improved rate but the fridge is also brought online. Therefore, categorically, you can conclude that if you have a Euro 6 towing vehicle you shall neither charge your leisure battery nor run your fridge and shall require a **WILDSIDE** to achieve this. No Sterling, No charge, No Fridge.

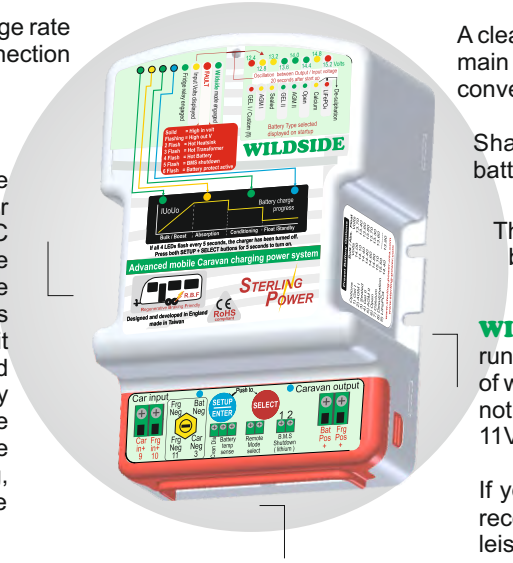
An absorption fridge, when at 12V would consume in excess of 10A. Down at 8V, this is more like a 16A consumption. The **WILDSIDE** enables the fridge to operate, even at these extreme conditions, with a surplus of several amps to charge your leisure battery. Note, we recommend against the use of absorption fridge, as they are extremely thirsty. Possibly go with a compressor fridge (~2A).

The Solution - requirements:

1) Deal with the massive voltage drop down the cables / plugs between the car and the caravan by boosting the low voltage to the correct voltage expected to charge the batteries. Also, reducing the voltage during the voltage highs associated with the new Euro 6 engines to prevent damage to equipment.
2) Utilize as much of the standard plug and wiring system as possible to avoid changing the basic system - for the sake of ease of installation.
3) Enable the fridge to operate (12V aspect), in transit, or remain (optional setting) in operation if not connected to 230V.
4) Charge the on board batteries, fast, using a 4 stage charging profile + 9 battery type programmes available. This ensures the battery is fully charged. Plus, a custom set option allowing the unit to be set up to any customer's personal choice. This ensures your electric caravan mover works when you arrive at your destination.

DC V (in)	DC V (out)	Current (A)	Weight (Kg)	L x W x D mm	Code
12V	12V	25A input	0.9	160 x 96 x 55	BBC1225

The BBC shall dramatically increase the charge rate (500%+) and shall compensate for poor connection and Euro 6 charging issues.



A clean and simple install in the main charging cable via the 20A conventional socket.

Shall easily double your useful battery storage capacity.

This constant current charger also enables the battery plates to stay much cleaner and last longer.

Charging modes:

1) **Battery bias mode (default).** This mode prioritises the leisure battery charging over running the fridge constantly. The BBC intelligently determines the state of your leisure battery. When the leisure batteries require charge, the fridge is offline and current is directed solely to the leisure battery. When it sees the leisure battery as sufficiently charged it shall bring the fridge online + simultaneously charge the leisure battery with any surplus. The BBC shall continually monitor the leisure battery. If the leisure battery begins depleting, due to a load, the BBC reverts to charging the leisure battery as priority.

2) **Fridge bias mode.** This mode brings the fridge online instantly and continuously, irrespective of leisure battery state of charge. Bringing the fridge online, particularly if the fridge is an absorption fridge, shall consume the majority of current. Any surplus current shall be directed to the leisure bank. Therefore, you shall likely still get battery charging, albeit less than battery bias mode.

WILDSIDE mode. This mode allows the fridge to run directly from the 12V leisure battery irrespective of whether you are hooked up to a towing vehicle or not. We have implemented a low voltage cut off at 11V to prevent complete leisure battery discharge.

If you are to use the **WILDSIDE** mode we would recommend increasing the Ah capacity of your leisure battery.

WILDSIDE mode is not default. The default mode is campsite mode. Campsite mode isolates the fridge from the leisure battery when not towing but enables fridge operation when towing.

Other Specification:
- 80A fridge engage relay.
- Automatic operation.
- OEM lock, to prevent tampering.
- 16 LED information and alarm panel.
- Optional battery temperature compensation.
- Thermostatically controlled fan cooling.
- High grade fire retardant plastic case.

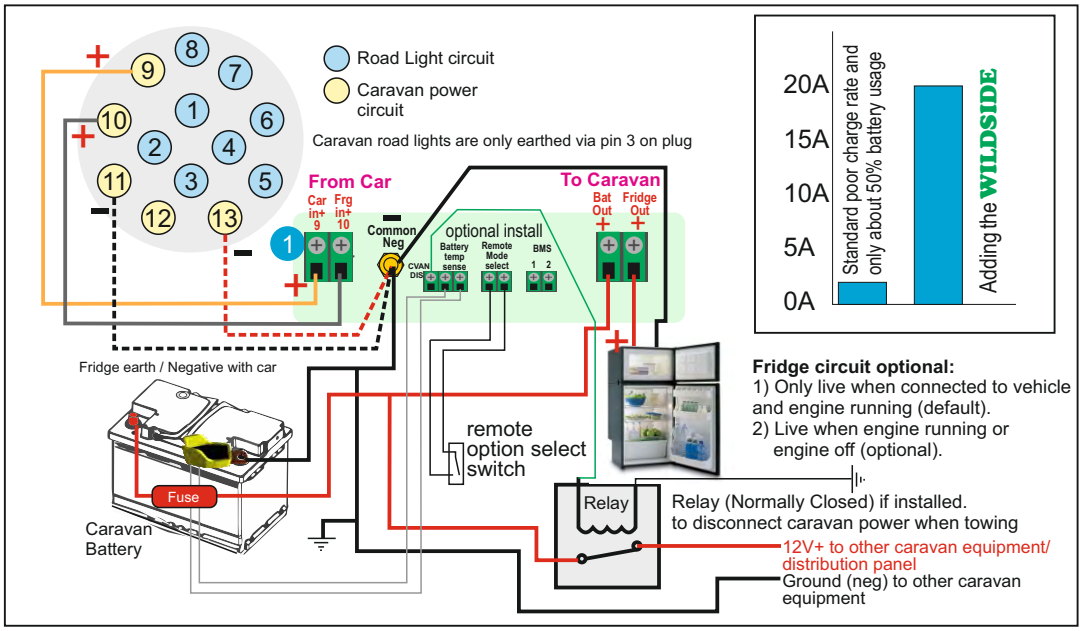
BBC1225 performance table

Input Current	Alternator Voltage	BBC input Voltage	BBC total output voltage | current
25A	12.4V	10.7V	14.4V @15.5A
25A	14.0V	12.4V	14.4V @17.6A
25A	15.0V	13.4V	14.4V @ 19.0A

* Voltages under regen. braking system

9 pre-programmed charging profiles for AGM, Gel, sealed / flooded, calcium and lithium ($LiFePO_4$) batteries.

Optional battery temperature sensor with compensation



Fridge circuit optional:
1) Only live when connected to vehicle and engine running (default).
2) Live when engine running or engine off (optional).

Variable Induction Hobs

Sterling's range of new induction hobs are a powerful and competitive step into the leisure market. Their ability to operate at even lower Watt inputs than their ratings mean that all clients needs can be met.

IHP
Portable and Storable - great for hiding away in a drawer and putting on surface only when required.

Induction Hob**: Part No: IHP (induction hob portable)**
Voltage 230VAC | 50Hz
1500W maximum power
Variable power consumption | 8 settings 200W-1500W - ideal for inverter use
A-Grade Black Crystal Plate Ø260mm
Double layered coil heating.
Housing Material: PP+ABS.
Product Size:282mm x 311mm x72mm
Intelligent Cooking Functions
Power Indication on display
Over Heat + Voltage + Current Protection
Auto shut off in 1 minute without induction pan.
1.5m of AC cable with British Standard BS Plug
CE, EMC, ROHS approval

Induction Hob**: Part No: IH1 (induction hob single fixed install / built in)**
Voltage 230VAC | 50Hz
1500W maximum power
Variable power consumption | 8 settings 200W-1500W - ideal for inverter use
A-Grade Black Crystal Plate Ø260mm
Coil heating
Housing Material: PP.
Product Size:288mm x 82mm
Intelligent Cooking Functions
Power Indication on display
Over Heat + Voltage + Current Protection
Auto shut off in 1 minute without induction pan.
1.5m of AC cable with British Standard BS Plug
CE, EMC, ROHS approval

IH1 (built in)
Single induction hob designed for a fixed install on counter surface. Users apply changes to the settings with the remote control (included).

IHFB (built in)
Twin induction hob, front and back, designed for a fixed install on a counter / surface. Users apply changes to the settings on the hob itself.

Induction Hob**: Part No: IHFB (Front and Back / Built in)**
Voltage 230VAC | 50Hz
2800W maximum power w/ power share
Front 1200W Maximum
Rear 1800W Maximum
Zinc alloy plated bottom
A-Grade Black Crystal Plate
Built in size 495mm x 265mm
Coil heating
Intelligent Cooking Functions
Power Indication on display
Over Heat + Voltage + Current Protection
Auto shut off in 1 minute without induction pan.
1.5m of AC cable with British Standard BS Plug
CE, EMC, ROHS approval

Induction Hob**: Part No: IHSBS (Side By Side)**
Voltage 230VAC | 50Hz
2800W maximum power w/ power share
Left 1800W Maximum
Right 1800W Maximum
Zinc alloy plated bottom
A-Grade Black Crystal Plate
Built in size 365mm x 575mm
Coil heating
Intelligent Cooking Functions
Power Indication on display
Over Heat + Voltage + Current Protection
Auto shut off in 1 minute without induction pan.
1.5m of AC cable with British Standard BS Plug
CE, EMC, ROHS approval

IHSBS (built in)
Twin induction hob, side by side, designed for a fixed install on counter / surface. Users apply changes to the settings on the hob itself.

Lithium Batteries

High power, low price lithium batteries with integrated BMS - 60Ah-120Ah

When you take into account how many conventional batteries you will destroy in operation to match the performance and cycle span of a lithium. A lithium battery is by far the lowest cost per cycle of any battery. Further reading on lithium batteries is available on page 66

For many years people have wanted a simple, easy, solution to installing lithium batteries in the automotive industry; today we have lithium batteries with built in BMS and automatic shutdown systems that take care of the extreme faults that may be presented to a lithium battery. With the simple addition of a Battery to Battery charger the correct voltage and current profile is provided to the battery from the vehicle's alternator with no integration fuss. This means when your alternator voltage is low, the battery to battery charger increases the voltage and when your alternator's voltage is too high the battery to battery charger decreases it. Also, when you have too much current, the battery to battery charger reduces the current, thus, presenting the lithium battery with its ideal safe voltage and current requirements. This has never been more important than with the modern Euro 5/6 vehicle applications. The first all in one - simple to install - package that removes all fears with this technology for application on vehicles.

Bluetooth BMS App
- State of Charge %
- Battery Voltage
- Number of cycles
- Current flow
- State of each cell
- Balancing
- Temperatures
- Parameter settings

Lithium battery capacity is 100% usable, unlike that of lead acid's 50%.

Lithium batteries are also less than half the weight of the equivalent lead acid. This means that the available energy per weight ratio is 4 times better with lithium batteries.

Strap on the 100Ah model to aid with lifting.

Cell type is Prismatic

up to 0.8C charge
up to 2C discharge
(model dependent)

Handles on the 120Ah model to aid with lifting.

4 batteries can be linked in series to make up to a 48V battery bank.

12V 100Ah Model

12V 120Ah Model

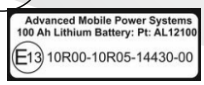
Unlimited batteries can be linked in parallel to increase Ah capacity, increase charge and discharge rates.

E13

12V 80Ah Model

12V 60Ah Model

recommended charging voltages:
Absorption: 14.4V
Max charge: 14.6V
Float: 13.8V



BMS and Safety features :

- Automatic fault recovery system.
- Internal cell thermal safety fuse.
- Flame retardant electrolyte.
- Fire retardant plastic case.
- Explosion proof stainless steel cells.
- Built in Battery Management System - cell balancing.
- Automatic battery protection system - internal.
- Automatic low voltage disconnect at 10V.
- Instant automatic short circuit protection.
- Protects the battery when high/low voltage | too high current and too high temperature.

Positive and negative terminals with bolt / thread and washer.

Capacity Ah	60Ah	80Ah	100Ah	120Ah
Voltage	12.8V	12.8V	12.8V	12.8V
Watt Hours Wh	760Wh	1024Wh	1280Wh	1536Wh
Continuous charge current (max)	50A (0.8C)	60A (0.7C)	70A (0.7C)	80A (0.7C)
Continuous discharge current (max)	120A (2C)	130A (1.6C)	150A (1.5C)	150A (1.5C)
Cell type	Prismatic	Prismatic	Prismatic	Prismatic
Recommended charge voltage	14.4V	14.4V	14.4V	14.4V
Float voltage	13.8V	13.8V	13.8V	13.8V
Cutoff temperature	-20Deg C	-20Deg C	-20Deg C	-20Deg C
E13 Marking	yes	yes	yes	yes
Dimensions L x H x D cm	28 x 17.2 x 17.6	26 x 21 x 16	33 x 21.5 x 17	41 x 23.5 x 17
Part Number	**AL1260**	**AL1280**	**AL12100**	**AL12120**

Advanced Alternator Regulators

Pro Reg BW (Waterproof)

Maximum Alternator Rating:
With existing fitted regulator 350A alternator.
With no fitted regulator 150A alternator

Field Rating:
Positive Field Control = 8A maximum field current.
Negative Field Control = 13A maximum field current.

Waterproof IP66 (built to) - as the unit is sealed the longevity of the regulator is significantly enhanced as the circuit board is not exposed to the elements.

Pro Reg BW Waterproof Advanced alternator regulator			
Voltage DC	**L x W x D**	**Weight Kg**	**Code**
12V	120 x 80 x 45	0.4	AR12W

1 x Battery Temp Sensor (TSAY)

2 x Battery Temp Sensor (TSAY)

Pro Reg DW (Waterproof)

Maximum Alternator Rating:
With existing fitted regulator 400A alternator.
With no fitted regulator 200A alternator

Field Rating:
Positive Field Control = 12A maximum field current.
Negative Field Control = 18A maximum field current.

12V and 24V operation

Waterproof IP66 (built to) - as the unit is sealed the longevity of the regulator is significantly enhanced as the circuit board is not exposed to the elements.

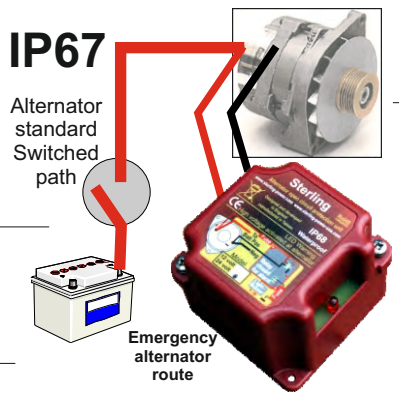
15 LED information panel

Pro Reg DW Advanced alternator regulator			
Voltage DC	**L x W x D**	**Weight Kg**	**Code**
12V & 24V	160 x 96 x 55	0.58	PDARW
Remote control	170 x 90 x 40	0.25	PDARR

Alternator Open Circuit Protection Device

Protects your alternator from **massive spikes** caused when you inadvertently isolate an alternator by switching the battery off or a cable is loose or a fuse blows.
Protects against any action which results in the alternator being disconnected from a battery when in operation.

Simple safe emergency route for that spike to be discharged giving full protection to the alternators regulator



The protection device does not carry the main current of so only light wiring is required.

Unit works with any alternator or splitting device (12V or 24V).

Alternator protection device			
Voltage	**L x W x D mm**	**Weight Kg**	**Code**
12V	90 x 90 x 60	0.25	APD12
24V	90 x 90 x 60	0.25	APD24

Pro Reg	BW	DW
Digital software control with slow start	●	●
Dynamic Progressive battery charging	●	●
Can be used in parallel (recommended) or stand alone regulator	●	●
Programmable for different battery types	●	●
Single unit fits 99% of alternators and all battery types	●	●
Charges to 4 step progressive constant current charging curves	●	●
Self diagnosing fault system	●	●
Totally isolates the advanced regulator in fault condition	●	●
Information 6 LED display one tri coloured		
Information 8 LED display (B only)	●	
Battery Temperature sensing	●	●
High battery temp trip	●	●
High battery voltage trip	●	●
High alternator voltage trip	●	●
De-sulphation ability on open lead acid batteries	●	●
In event of failure auto return to standard alternator regulator	●	●
Can be used with or without the temperature sensor	●	●
Monitors for excessive neg voltage drop and trips	●	●
Protects batteries if temperature sensor open circuited	●	●
Protects batteries if split charge relay/diode fails open	●	●
Protects batteries if advanced reg fails closed	●	●
Protects batteries if battery sense wire falls off or broken	●	●
10 LED display		
13 LED display		●
12 or 24V operation, selectable		●
Remote control option		●
Alternator temperature sensor and boost disengage		●
Unit thermostatically controlled fan cooling for max performance		
IP 66 waterproof & ignition protected for W options	●	●

Advanced Regulator features explained in more depth:

Digital software control with slow start:
Digital control (software) means that very complex information and mathematical algorithms can be processed that would not be possible with an analogue hardware system. Unit ramps currents early - prevents alt slip.

Dynamic progressive battery charging: This is a term used to explain that the internal software calculates a different charging regime every time it is used as the battery state is never the same. Older systems simply used fixed trimmers.

Can be used in parallel or as a stand alone regulator: These regulators can be used as stand alone and in parallel with existing regulators. Good practice to leave original regulator in place for fail safe.

Programmable for different battery types: Multiple charging profiles for AGM, Gel and lead acid cells.

Single unit fits 99% of alternators: Manufactures have multiple, we have one.

Charges to 4 step constant current progressive charging curves:

Self diagnosing fault findings:
The regulators scan the system every two seconds and if all the parameters are not within our preset values then the unit will switch 'off' and signal a fault. This is to prevent adverse damage to your batteries.

Totally isolates the regulator in a fault condition:
Sterling's system physically breaks the field wire guaranteeing that the Advanced Regulator will stop working.

Information LED display:

Battery temperature sensing:
One battery temperature sensor is supplied with the unit. This will adjust the output charging curves with the ambient battery temperature.

High battery temperature trip:
Sterling's software will pick up the high temperature and in the worst case of a battery exceeding 50 deg C, will switch 'off' the regulator and display a warning.

High battery voltage trip:
In the event of the battery voltage going too high the unit will switch the regulator 'off' and display a warning.

High alternator voltage trip:
This is the most common trip used. In the event of poor wiring, incorrect installation, or any fault in the system, the alternator voltage will rise too high; the unit will trip out and display a warning.

De-sulphation ability on open lead acid batteries:
In order to prevent and even de-sulphate lead acid batteries a regular charge cycle exceeding 14.4V (x 2 for 24V) will remove the sulphate from a battery bank and so prolong its life expectancy.

In event of failure auto return to standard regulator:
Your standard regulator will automatically take over and allow the journey to continue but at a lower charge rate.

Can be used with or without temperature sensing:
Some people don't want to fit temperature sensors, the choice is yours, the software will pick up if you use it or not and control accordingly.

Protects batteries if temperature sensor open circuited:
A big problem with temperature sensors (why people don't like fitting them) is that they are on a battery. If someone changes the batteries and breaks or open circuits the temperature sensor wire, most Advanced Regulators will destroy your batteries by over charging them. Not so with a Sterling. In the event of a failure of a cable break the Sterling software will pick it up within 2 seconds and return to the default settings and carry on safely. It will also protect batteries if split charge relay/diode fails open circuit.

A common fault when fitting an Advanced Regulator is the old split charge diode or relay that is not up to handling the new performance, resulting in a regulator to fail. This will result in the destruction of the other battery bank, as the battery sense wire will be isolated from the alternator (but not with a Sterling).

Protects batteries if advanced regulator fails:
In the unlikely event of the Advanced Regulator failing then most regulators will fail closed and destroy all your batteries (Sterling software will prevent this from happening).

Alternator temp monitoring and disengagement:
This unit can monitor the alternator temperature and switch off the control unit in the event of high alternator temperature. The Advanced Regulator will automatically re-engage when the alternator cools down.

Thermostatically controlled fan cooling: Pro Reg D only
This still appears to be the only fan cooled regulator on the market (as per 2019) and offers the ability to connect this device to massive alternators if required. This unit can deliver field currents up to 20A+. This allows use on alternators way up to 600A plus or to work in extremely high ambient temperatures. We are unable to correctly advise on the maximum performance of this regulator against any large alternators as we have simply been unable to stretch it to its maximum with any alternators we have found to date to run with it.

Extremely good advice to our customers regarding fitting Advanced alternator regulators. There is a trend (especially in the USA) to remove the standard alternator regulators and throw them away and fit a advanced regulator by its self (if you are knowledgeable about alternators then this ***can*** be done) , this is an extremely bad practice, always retain the standard regulator in place as this offers a lot simpler installation and the finished setup is much safer as you have an automatic back regulator installed in the unlikely event off the advanced regulator failure, this allows you to continue you journey on the standard regulator and you simply lose the advanced aspect .

Also when the standard reg is removed this over complicates the installation process and as such makes it impossible to have a good installation guide due to the variation off connectors multiplied by the thousands off different alternators .

Where as the Sterling advanced reg will work as a stand alone reg on a alternator it's simply not possible for us to assist anyone going down this route, you need a local alternator expert to fit the advanced reg who can sort out the mess created when the standard reg is removed and discarded - we at Sterling power products simply cannot help.

In the event off a defective standard reg if it has failed then replace it and get the standard alternator working before attempting to install the advanced reg, if your alternator has no standard reg we advise you get one or a remote standard reg to get the alternator working as standard first before endeavouring to fit the advanced reg , this way the standard instruction will apply and an emergency back up regulator is already installed in case off a fault.

Attempting to fit a advanced regulator onto a alternator which is not working is just not recommended for the average person other than by an alternator expert.

Not recommended for vehicles (especially European vehicles) as this product may interfere with the vehicles management system, use the **Sterling Battery to Battery chargers for vehicles**

Warning: for large alternators (120A plus) where the original regulator is non existent (Balmar) then we recommend the Pro Reg D as this has fan cooling

Pro Reg Alternator max sizes

Pro Reg BW up to 350A with standard reg / 150A stand alone
Pro Reg DW up to 450A with standard reg / 150A stand alone

Alternator to Battery Chargers.

80A-400A (at 12V) 60A-200A (at 24V)

The Alternator to Battery charger (A2B) connects very simply to an existing alternator(s) and provides extremely fast and effective charge to the domestic/house bank (5+ times faster than a stand alone alternator). The A2B achieves this performance by pulling down the voltage on the alternator by putting a 'load' on it. This low voltage (at high current) is amplified to a 4 stage charging profile at the domestic bank. Due to the A2B's internal splitting system there is the option to charge the starter battery too. The starter does not get advanced charging, it simply gets a sufficient maintenance charge.

Quick and Easy Installation. This charger is effective, simple and fast to install. It transforms the output of the alternator into a sophisticated multi-stage charger resulting in faster and more complete charging of your house / domestic battery bank.

Starter bank and domestic bank charger. This charger has an intelligent integral splitting system. The output is split to the starter bank and to the domestic / house bank. Domestic receives advanced charging.

Multiple alternator inputs. Numerous alternators can be fed to the input of the charger provided the total current rating does not exceed the charger's rating. E.g. 400A charger can handle 4 x 100A alternators.

Largest model up to 400A (at 12V), 200A (at 24V).

No alternator modification required. The charger is fitted between the alternator and battery(s) and, unlike conventional regulators, requires no modification or interference with the alternator whatsoever. This saves on time and bypasses any engine management systems (ECU) or warranty issues.

Over 5 times faster charging. This charger optimizes the available output of the alternator and converts it to mimic that of a mains driven 4 stage battery charger. Consequently your batteries will charge faster resulting in less engine hours and a reduction in fuel used. This charger can therefore, pay for itself within a matter of weeks.

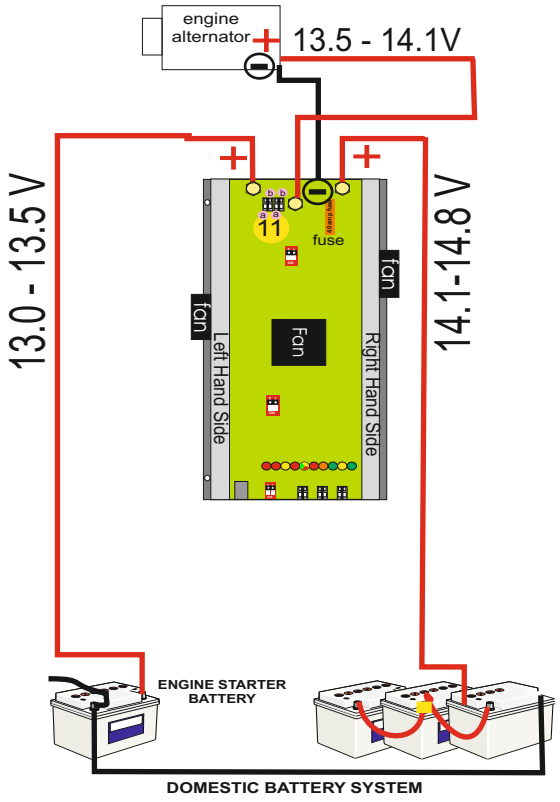
Not suitable for any modern European vehicle or any vehicle equipped with an advanced ECU. For suitable products - look to the range of Regenerative Braking Friendly devices – the Battery to Battery Charger.

Smallest model 80A - 130A (at 12V).

Battery and alternator temperature sensing. The chargers disengage the unit in the event of the alternator temperature getting too high, it then re-engages the unit when the alternator cools down. The same thing happens when the batteries get too hot.

Multiple charging profiles. Chargers have AGM, Gel, Flooded lead acid, sealed lead acid and calcium charging profiles.

System wiring, single or twin alt (minimum, requirement)

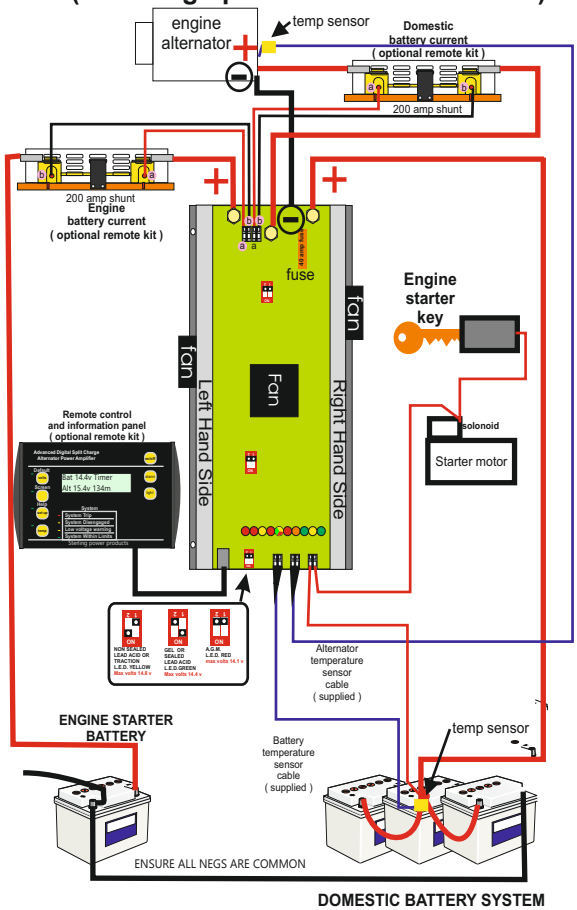


Alternator Regulator or Alternator to Battery Charger?
We are frequently asked this question.
For an in depth reason to choose the A2B over the alternator regulator. We recommend that you refer to our FAQ page. Here we shall discuss the main differences, the time it takes to wire up, engine management systems and warranty voiding.

Put simply the Alternator to Battery charger can be more easily and speedily installed, it tends to avoid any engine management issues and shall not void your manufacturers warranty.

Additional features:
1) Battery sensor. When DC cables are long a voltage drop can be induced across it. There is a connector which allows for the compensation of this drop.
2) Ignition start. Some alternators require a voltage on the alternator to start up. There is a built in device to overcome this problem in the event of such an alternator type being used.
3) The remote control. This offers full set-up information, plus voltages and temperatures of all the relevant places, as per the digital alternator regulator.

Full system wiring single or twin alt (including optional remote kit if used)



Optional Remote control for the AB12160/210/24100.
10m of pre-wired link cable and 2 x 200A shunts. Ideal for measuring current. Can be surface, recess or flush mounted.

200A
shunts included

Optional Remote control for the AB1280/12130/300/400.
10m of pre-wired link cable.
Does not measure current.

Alternator to Battery chargers

DC (V)	Max Alt size (A)	L x W x D	Weight Kg	Code
12V	80A	270 x 180 x 80	2.5	AB1280
12V	130A	270 x 180 x 80	2.5	AB12130
12V	300A	370 x 288 x 70	5	AB12300
12V	400A	370 x 288 x 70	5.1	AB12400
24V	80A	270 x 180 x 80	2.5	AB2480
24V	200A	370 x 288 x 70	5.2	AB24200
Remote for above products in Black (no shunts)				ABNRC
12V	160A	250 x 280 x 70	3.5	AB12160
12V	210A	250 x 280 x 70	3.5	AB12210
24V	100A	250 x 280 x 70	3.5	AB24100
Remote for above products in Red inc 2 x 200A shunts				ABRC

Pro Split R

0.0V drop alternator splitting system built to IP65

12V/24V 120A-250A.
Up to 2 alternator inputs and 4 outputs.

The Pro Split R is a 0.0V drop alternator splitting system. It is the successor to the old diode based splitting systems which induced large voltage drops at high current. The newer, much more intelligent, Pro Split R selects a battery bank and isolates the other battery banks to prevent their voltage misleading the alternator's regulator (assuming regulator is connected). This allows the regulator to focus on the correct battery and can maximise the alternator's potential. Then, at a specific level, the other battery banks are charged and finally all charged together. The charging performance can be further enhanced with the use of an **Advanced Alternator Regulator** (see pages 26/27).

Isolates the battery bank(s): The unit isolates when there is any attempt to back feed the power from the full battery bank to a more demanding battery.

Comprehensive L.E.D. display: that shows which channels are in use and which are not.

Micro Processor Controlled: All batteries are charged in conjunction with each other and back feed under high load conditions is prevented. The system also has the ability to disconnect the alternator and individual battery bank outputs in the case of problems caused by the alternator to other devices.

0.01 voltage drop through the current range :
This negligible voltage drop is far superior in performance in comparison to the old diode based splitting systems which suffered from a far greater voltage drop.

Alternator Regulators: The sense stud on the Pro Split R allows seamless integration of Sterling's alternator regulator with this 0.0V splitter resulting in the ultimate split charging device.

Overload Design: The model rated for 180A is actually continually rated for 240A with overload in excess of 2000A.

Backfeed protected:
If there is a defective battery charger on one battery bank trying to back feed into another battery bank, the unit would disconnect that battery bank to save others.

High Safety Elements Built In:
As much safety and control is built in as possible to protect your electrical system and to ensure available power is directed to where it is required most.

Distributes the most power: to the battery bank which demands it.

Isolates the main alternator: If the alternator was to fail, the Pro Split R would isolate all batteries to protect them from over charging (boiling).

Faster Battery Charging: 0.0V drop allows for a much faster charge. Additionally, once the Pro Split R is happy with the charge state of the starter battery the focus of the charge is directed to the larger domestic/house bank. This ensures a one on one charging experience between the alternator and house. N.B. The starter battery is always monitored and then prioritised if needs be.

Fail-Safe: In the event of unit failure, the engine start battery and alternator remain connected. This ensures the safe running of the boat/vehicle. It prioritizes the engine start battery charging over all other battery bank outputs.

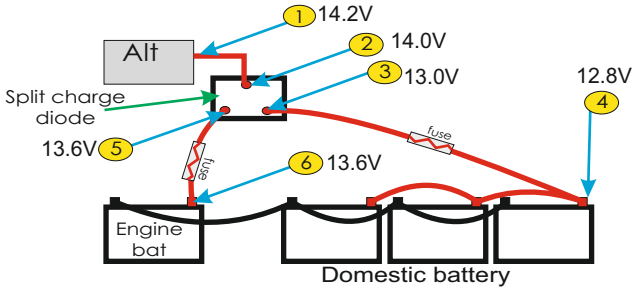
Larger Models: The image to the right is of the largest Pro Split R in the range. It handles 2 alternators in and 4 outputs. The outputs include 2 x starter batteries (one on each side) and 2 auxiliary banks. The alternator maximum is 130A at 12V for this model.

Works with 2 x alternator regulators: Provides a 4 stage charging profile to each of the 4 outputs for super fast charging on all banks.

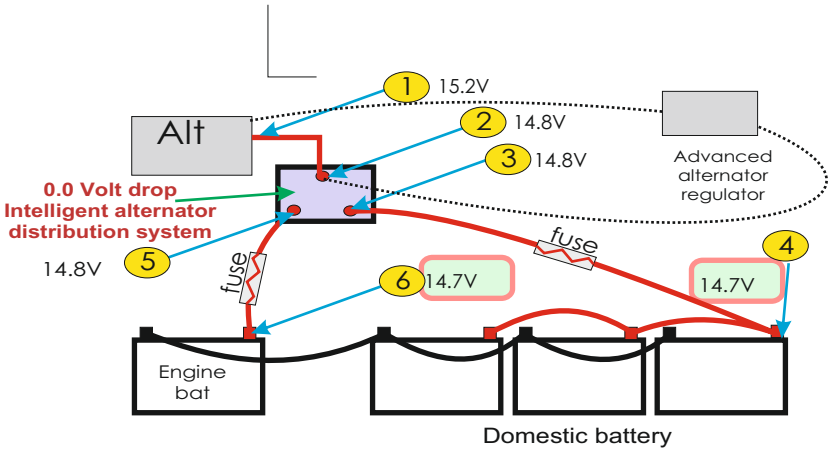
Not suitable for any modern European vehicle or any vehicle equipped with an advanced ECU. For suitable products look to the range of Regenerative Braking Friendly, such as the Battery to Battery Charger.

Examples of the problem where the old diode system can potentially be detrimental to both your battery charging rate and your batteries health/longevity.

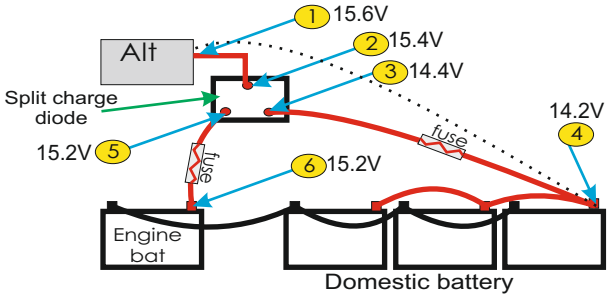
Example 1
Note the 12.8V at the Domestic Battery. This battery shall not receive any charge and shall sulphate. At higher current, the voltage drop across the **diode** is higher.



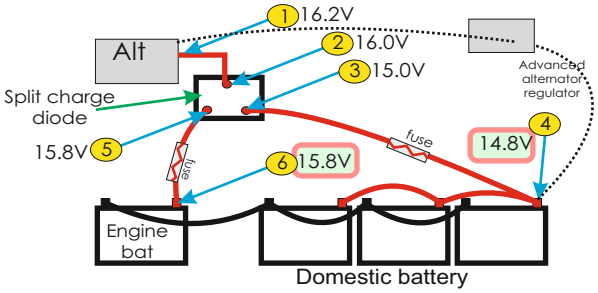
The Cure. The **Pro Split R** has the cure to the diode based issues.



Example 2
This example is with an intelligent regulator fitted.
Note the 15.2V at the Engine Battery. This battery shall over charge.
Note the 14.2V at the Domestic Battery. This battery shall under charge.
At higher current voltage drop across the **diode** is higher.



Example 3
Note the 15.8V at the Engine Battery. This shall boil.



Shared key

1= Alternator Voltage
2= Input to diode Voltage
3=Output diode Voltage to domestic battery
4=Voltage at battery terminal
5= Output Voltage to engine start battery
6=Actual Voltage at engine battery

Example 1
This example is with an intelligent regulator fitted. Note the 14.7V at the Engine Battery. This battery shall charge properly. Note the 14.7V at the Domestic Battery. This battery shall charge properly. At higher current voltage drop across the **Pro Split R** is negligible providing a better charging system.

Pro Split R 0.0 volt drop intelligent splitter

DC (V)	Max Alt (A)	Battery banks	L x W x D	Weight Kg	Code
12V	120A	2	150 x 80 x 120	0.6	PSR122
12V	180A	2	150 x 80 x 140	0.7	PSR182
12V	250A	2	150 x 80 x 155	0.9	PSR252
12V	120A	3	150 x 80 x 130	0.9	PSR123
12V	180A	3	150 x 80 x 150	1	PSR183
12V	250A	3	150 x 80 x 180	1.3	PSR253
Twin 12V	2 x 130A	4	150 x 80 x 295	1.8	PSRT134
24V	60A	2	150 x 80 x 120	1.8	PSR62
24	100A	2	150 x 80 x 140	0.6	PSR102
24V	150A	2	150 x 80 x 165	0.7	PSR152
24V	240A	2	150 x 80 x 250	1.2	PSR242
24V	60A	3	150 x 80 x 150	0.7	PSR63
24V	100A	3	150 x 80 x 175	1	PSR103
24V	150A	3	150 x 80 x 220	1.3	PSR153
Twin 24V	2 x 80A	4	150 x 80 x 295	1.8	PSRT84

NEW 2021

Pro Split L

0.0V | 0.0A drop alternator splitting latching relay IP65

12V/24V Auto Select 90A-270A.
Up to 2 alternator inputs and 4 outputs.

The Pro Split L (PSL), like its predecessor, is a 0.0V drop alternator splitting system. It is the successor to the Pro Split R. The newer, more intelligent, Pro Split L uses latching relays that consume 0.0A and 0.0V drop during operation unlike conventional relays that can use up to 1A to remain closed. The PSL is more versatile as it can be used with wind, solar, combis (inverter chargers), single, multiple output battery chargers and with alternator(s) and alternator regulators. Furthermore, the PSL can be used in conjunction with Sterling's Battery to Battery chargers to enable correct charge of lithium batteries. Charge can flow through the PSL from any terminal to charge any of the other battery banks that are connected. The SELECT / INPUT buttons enable the PSL to be customised regarding activation voltages etc..

Combined inverter chargers: one of the big advantages of the pro split L is to allow other power sources (other than just the alternator(s)) to contribute their power to the total DC system. Combis' inherently have large battery charging abilities but only charge the main leisure battery that they are connected to. However, the Pro Split L allows the Combi to effectively charge all the battery banks in the DC at full power.

Voltage sensitive mode and ignition feed mode or BOTH. Typically, you would require an ignition feed to activate splitting systems. However, this Pro Split L shall operated based on voltage thresholds. These thresholds can be adjusted to suit your battery requirements. You can also operate the Pro Split L with a simple ignition feed or have a combination of both.

Isolates the battery bank(s): The unit isolates when there is any attempt to back feed the power from the full battery bank to a more demanding battery.

0.01 voltage drop through the current range :
This negligible voltage drop is far superior in performance in comparison to the old diode based splitting systems which suffered from a far greater voltage drop.

Backfeed protected:
If there is a defective battery charger on one battery bank trying to back feed into another battery bank, the unit would disconnect that battery bank to save others.

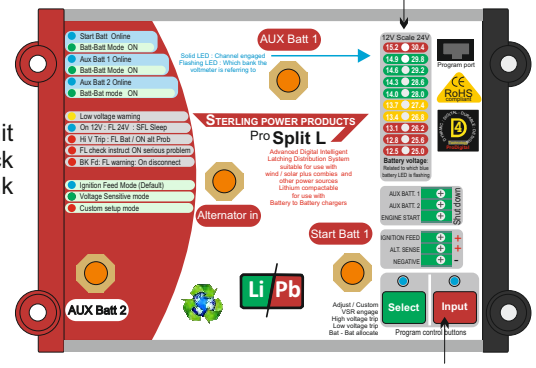
Distributes the most power: to the battery bank which demands it.

Larger Models: The image to the right is of the largest Pro Split R in the range. It handles 2 alternators in and 4 outputs. The outputs include 2 x starter batteries (one on each side) and 2 auxiliary banks. The alternator maximum is 180A at 12V for this model.

Lithium batteries. We recommend charging a lithium battery bank via a Battery to Battery charger. Battery to Battery chargers regulate voltage and current to within the operational parameters of your lithium batteries - they also prevent current back feed through it to the other batteries in your system. These chargers can be used in conjunction with the Pro Split L. Please view the wiring example overleaf.

The Pro Split L comes with up to 3 BMS shutdown connector

Latching relays - latching relays require 0.0A to remain in position. There is also a 0.0V drop across them. This makes latching relays the most efficient relaying method. **Perfect for solar and wind generators where power harvest is minimal anyway.**



Programmable buttons on the device.

Faster Battery Charging: 0.0V drop allows for a much faster charge. Additionally, once the Pro Split R is happy with the charge state of the starter battery the focus of the charge is directed to the larger domestic/house bank. This ensures a one on one charging experience between the alternator and house. N.B. The starter battery is always monitored and then prioritised if needs be.

Micro Processor Controlled: All batteries are charged in conjunction with each other and back feed under high load conditions is prevented. The system also has the ability to disconnect the alternator and individual battery bank outputs in the case of problems caused by the alternator to other devices.

Not suitable for any modern European vehicle or any vehicle equipped with an advanced ECU. For suitable products look to the range of Regenerative Braking Friendly, such as the Battery to Battery Charger.

Single output battery chargers: A single output battery charger can be put onto the input of Pro Split L and shall split the current to all of the battery banks that are on your DC system. The Pro Split L essentially turns your single output battery charger into a multi output charger. This saves having to double up on cable and spend more money on a multiple output battery charger. Both alternator and charger can share the same input stud!

12V / 24V Auto Select. The Pro Split L shall select automatically whether the unit is connected to a 12V system or a 24V system.

Voltmeter on PSL - shows DC voltage on all outputs.

Overload Design: The model rated for 180A is actually continually rated for 240A with overload in excess of 2000A.

Alternator Regulators: The sense stud on the Pro Split L allows seamless integration of Sterling's alternator regulator with this 0.0V splitter resulting in the ultimate split charging device.

High Safety Elements Built In:
As much safety and control is built in as possible to protect your electrical system and to ensure available power is directed to where it is required most.

Fail-Safe: In the event of unit failure, the engine start battery and alternator remain connected. This ensures the safe running of the boat/vehicle. It prioritizes the engine start battery charging over all other battery bank outputs.

Isolates the main alternator: If the alternator was to fail, the Pro Split R would isolate all batteries to protect them from over charging (boiling).

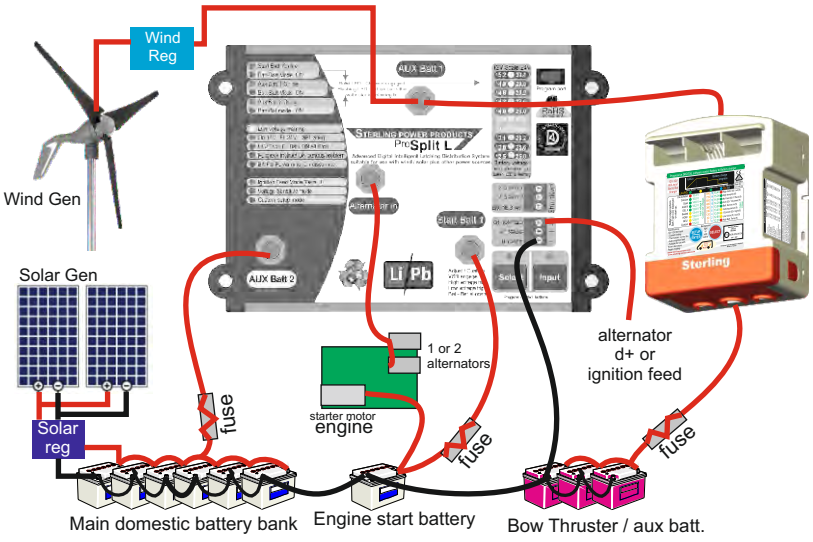
Works with 2 x alternator regulators: Provides a 4 stage charging profile to each of the 4 outputs for super fast charging on all banks.

Pro Split L - Wiring Examples

Example 1:

Here, solar and wind are connected to the output battery terminals. Thanks to the voltage sensitive feature, all of the other battery connected shall benefit from surplus charge coming from the solar and wind. No ignition required.

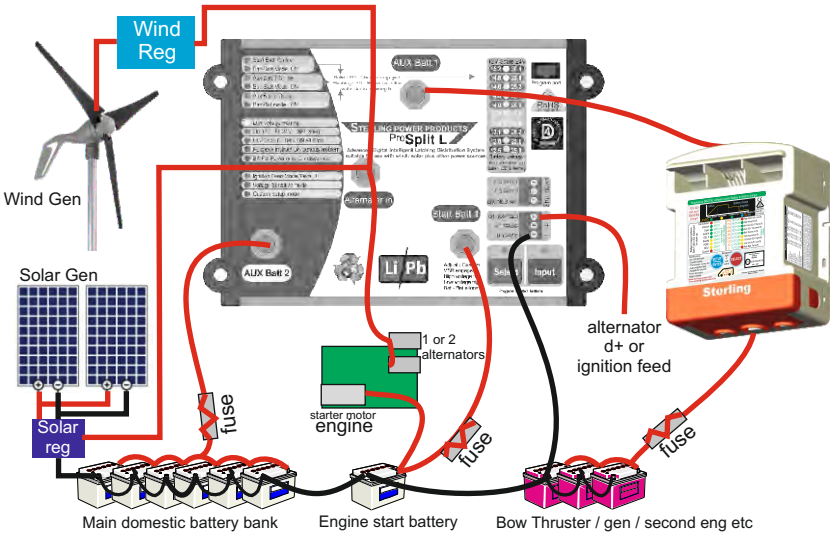
Sterling's Battery to Battery charger is a prerequisite when charging Lithiums - to ensure correct charging voltage and current limit.



Example 2:

Here, solar and wind are connected to the alternator input terminal along with the alternator - as per a conventional splitting system. All connected battery banks shall be charged. This can be used with or without ignition feed connected, depending on how you set it up.

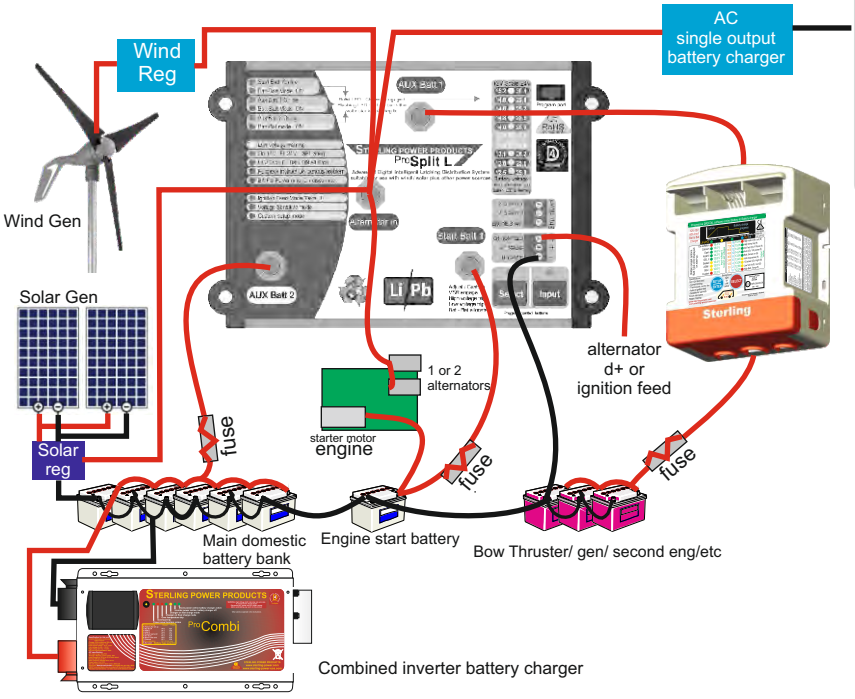
Sterling's Battery to Battery charger is a prerequisite when charging Lithiums - to ensure correct charging voltage and current limit.



Example 3:

Here, solar, wind and an AC to DC battery charger are connected to the alternator input terminal along with the alternator. We have also put a Combi inverter / charger onto the domestic battery. The PSL can be set to enable all charging source (solar, wind, battery charger, alternator and Combi) to charge up all of the battery banks connected to the PSL.

Sterling's Battery to Battery charger is a prerequisite when charging Lithiums - to ensure correct charging voltage and current limit.



Pro Split L 0.0V + 0.0A drop intelligent splitter

DC (V)	Max Alt (A)	Battery banks	Size L x W x D mm	Weight Kg	Code
12/24	90	2	150 x 80 x 120	0.6	PSL902
12/24	180	2	150 x 80 x 140	0.7	PSL1802
12/24	270	2	150 x 80 x 155	0.9	PSL2702
12/24	90	3	150 x 80 x 120	0.9	PSL903
12/24	180	3	150 x 80 x 140	1.1	PSL1803
12/24	270	3	150 x 80 x 155	1.3	PSL2703
12/24	2 x 180	4	150 x 80 x 295	2.0	PSLT1804

Current Limiting Voltage Sensitive Relays.

from 70A - 280A 12V/24V

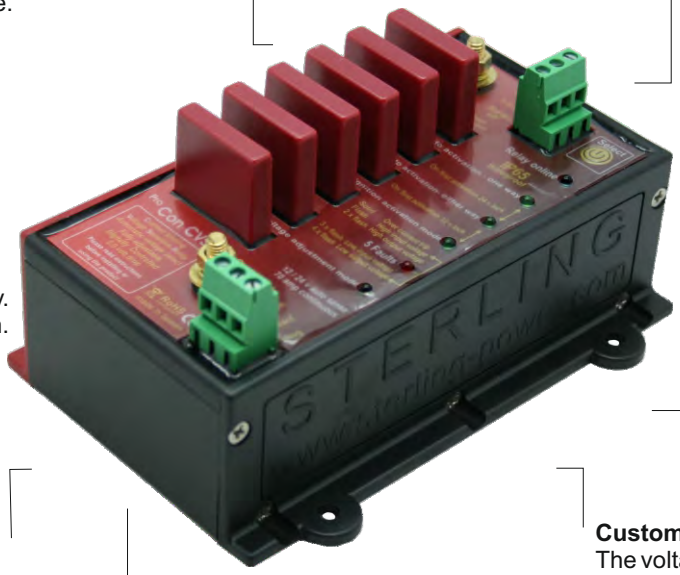
The range of **C**urrent Limiting **V**oltage **S**ensitive **R**elays (CVSRs) offer bullet proof versatility. Not only do they act as bidirectional 0.0V drop charging relay but they also offer the ability to react in a controlled way to excessive loads that would normal destroy conventional relays. Under high loads, such as: Large Inverters / AC units / Bow Thrusters. The load drawn down the DC cabling would exceed the cable and relay rating and cause the arc to weld shut or would simply cause the relay to shatter. However, the CVSRs have PTC fuses which allow this high load to abate before opening the relay, thus protecting your relay/system.

Built in current limiting: Courtesy of the PTC fuses (red components jutting out of the unit), if overloaded, the product will simply shut off safely so as to protect the relay and the installation. Once the high load demand has been removed the relay is safe to re-engage.

Available in: 70A, 140A, 210A & 280A. 12/24V auto select.

0.0V drop charging relay: 0.01V drop is the voltage drop across the relay. This is a negligible drop allowing for the best charge possible across the relay.

Extremely low quiescent current, approx 1 mA.



6 LED information display. With remote LED option. With 5 built in alarms

Start up time delays: A 30 second start up time delay prevents the relay coming on while the engine is being started, protecting the relay circuit and preventing fuses blowing and damage to the relay.

Uni and Bidirectional charging relay:

IP66 waterproof (built to)

Manual Override: The unit, by default, is voltage sensitive. It requires 13.3V to close circuit and 13.0V to open circuit. A manual override allows the user to dictate when the relay activates. Typical override would be an ignition feed.

Customisable on and off voltages: The voltage at which the relay closes and opens are default at 13.3V (on) and 13.0V (off) - twice for 24V. However, these thresholds can be adjusted.

Current Limiting Voltage Sensitive Relays (adjustable)

DC (V)	Rated (A)	L x W x D mm	Weight Kg	Code
12V & 24V auto	70A	140 x 120 x 40	0.1	CVSR70
12V & 24V auto	140A	140 x 180 x 40	0.2	CVSR140
12V & 24V auto	210A	140 x 210 x 40	0.25	CVSR210
12V & 24V auto	280A	140 x 240 x 40	0.25	CVSR280

IMPORTANT Safety Features

(shared by CVSRs / VSRs and Ignition Fed Relays).

- High overload surge rating.
- Back EMF spark arrester.
- Emergency auxiliary forced activation.
- High battery voltage trip protection.
- Suppression diodes across relay to prolong life.
- SAEJ1171 ignition protected.
- 5 alarm functions and safety trips.
- Protects primary battery from discharge.
- Anti Relay contact arching protection.
- Reverse polarity protected.

Voltage Sensitive and Ignition Fed Relays

Voltage Sensitive Relays Pro Con VSR range (80A-240A)
(refer to CVSR page for safety features)

0.0V drop and low quiescent current. The voltage drop is 0.01V allowing for negligible power loss across the relay. The quiescent current is 1mA.

6 LED information display

Automatic voltage activation. True to word the relays are sensitive to voltage. On voltage is 13.3V. Off is 13.0V (x2 for 24V). **This can be manually changed.**

Ignition/signal override is possible to allow for manual override.

High quality brass connections.

Uni and Bidirectional charging relay: Multiple relays can be used to link / isolate as many battery banks as suitable.

Built to IP66 waterproof

Available in: 80A, 160A, 240A
12/24V auto select.

Start up time delays: A 30 second start up time delay prevents the relay coming on while the engine is being started, protecting the relay circuit and preventing fuses blowing and damage to the relay.

Voltage Sensitive Relays (adjustable)				
DC (V)	Rated (A)	Size L x W x D mm	Weight Kg	Code
12 & 24 auto	80	140 x180 x 40	0.1	VSR80
12 & 24 auto	160	140 x190 x 40	0.2	VSR160
12 & 24 auto	240	140 x200 x 40	0.25	VSR240

Additional VSRs

Magnetic Digital VSR: The Digital VSR shares the **same features as the above VSR80-240 range**. It has fewer LEDs but is totally waterproof and ingress proof. This relay requires the use of the magnet to change the relays settings. The largest current rating is 160A.

Voltage Sensitive Relays (adjustable)			
DC (V)	Rated (A)	Weight Kg	Code
12 & 24 auto	80	0.1	VSRB80
12 & 24 auto	160	0.1	VSRB160

Analogue VSR: The Analogue VSR is the most affordable VSR that Sterling does. It has no adjustable features. The user can not adjust the voltage thresholds and there is no switching delay. The unit is also not 12V / 24V auto select. They are simply 12V or 24V models. The unit has a fixed on voltage of 13.3V and the fixed off voltage of 13.0V. Ignition override is also possible.

Voltage Sensitive Relays (adjustable)			
DC (V)	Rated (A)	Weight Kg	Code
12	80	0.1	VSRA8012
12	160	0.1	VSRA16012
24	80	0.1	VSRA8024
24	160	0.1	VSRA16024

Ignition Fed Relays
(refer to CVSR page for safety features)

Available in:
12V 80A,160A & 240A
24V 50A 100A & 150A

Requires Ignition / D+ / Signal feed to operate: This range of low cost signal activated relays are the simplest in the range. It offers the ability to link together as many battery banks as you wish and therefore charge different battery banks on a boat / vehicle when the engine is running.

IP66 waterproof (built to)

Starter battery interlock: This unit has the ability to interlock with up to 2 engines starter motors to ensure the relay is inactive when starter motors are engaged, thus protecting the relay and avoiding fuses blowing.

Ignition / Signal fed Relays				
DC (V)	Rated (A)	Size L x W x D mm	Weight Kg	Code
12	80	140 x 60 x 40	0.025	IFR1280
12	160	140 x 70 x 40	0.030	IFR12160
12	240	140 x 80 x 40	0.030	IFR12240
24	50	140 x 60 x 40	0.025	IFR2450
24	100	140 x 70 x 40	0.030	IFR24100
24	150	140 x 80 x 40	0.030	IFR24150

120A - 200A Ignition Fed relays 12V / 24V

Part No.	R12120	R24120	R12200	R24200
Coil Nominal (V)	12V	24V	12V	24V
Contact Current Rating (A)	120A	120A	200A	200A

Pro Latch R - Latching Relays.

80A - 240A Models

The Pro Latch R is a versatile latching relay with 4 major operational modes. The benefit of using a latching style relay over a conventional relay is down to the efficiency of the relays. Conventional relays use up to as much as 0.5A to stay closed circuited. However, the latching relay does not use any current to stay closed. This is ideal for low harvest systems that include wind and solar. The 4 major operational modes are discussed below:

Models:
80A / 160A / 240A
12V and 24V.

Ip66 Waterproof. The Pro Latch R is built to Ip66 ratings

More Efficient. Latching relay technology is more efficient than conventional relays as they consume no power to stay closed. The only minor current drawn is via the software (0.5mA).

Ideal for **Solar** and **Wind** technology**.** Along with other low harvest energy sources.

Intelligent switching algorithms. All operational modes switch the relay between on and off positions. There is a time and history element to when the relay changes position, it not a simple voltage threshold switch. This is designed to prevent unnecessary relay chatter and inefficiencies.

Operational Mode 1.
Bidirectional Charging Mode.
This mode allows activation of the Pro Latch R at both sides of the relay - ideal for normal between battery charging. Activation voltages are **on** at 13.3V and **off** at 12.9V.

12V or 24V Auto select. The Pro Latch R's can detect whether you have a 12V or 24V system and shall conduct its operation accordingly.

Operational Mode 2.
Battery Protection Mode.
This mode allow the user to protect the battery from excessive charging and discharging. The **on** voltage is 12.9V and the **off** is 10.9V.

Operational Mode 3.
Engine Start Protect.
This mode allow the user to protect the start battery from discharging beyond a point whereby they can no longer start the engine when cranking. The **on** voltage is 12.9V and the **off** is 12.3V.

Operational Mode 4
Unidirectional Charging Mode.
This mode allows for relay activation on one side of the relay only. Very similar to mode 1 without the bidirectionality. **On** at 13.3V and **off** at 12.9V.

Remote Control

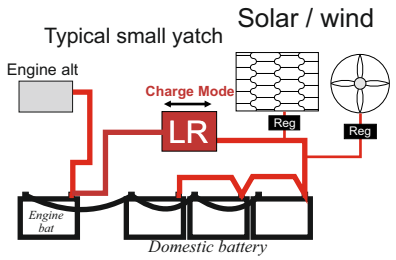
54mm hole cut

Pro Latch R Remote Control Functions
1) Input Voltage.
2) Output Voltage.
3) Optional waterproof display, encapsulated electronics.
4) Various over ride to allow lights to be switched on for safety. (only available with remote).
5) Sleep: power saver function.
6) Audible alarm stop.
7) Audible alarm disconnect.
8) Back light option on/off.
9) Background light colour change depending on function.
10) Relay circuit opened or closed indicator.
11) High Voltage trip alarm and low voltage warning.

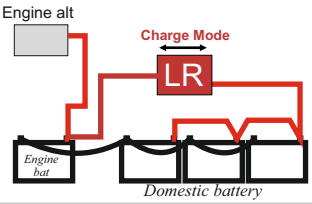
Remote control allows access to all the relevant information, the panel comes complete with a 5 metre telephone type extension lead. The remote is in a standard 54mm threaded housing. This is an optional product and is not required for the operation of the main product.

Examples of common applications for the Pro Latch R

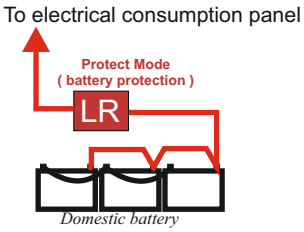
Bidirectional charging relay



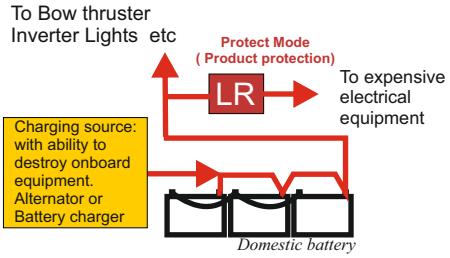
Bidirectional charging relay



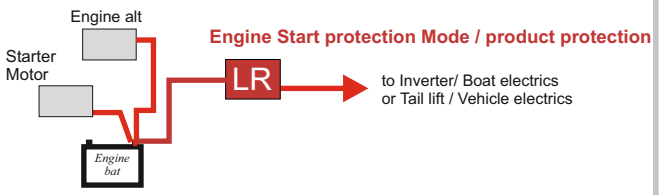
Battery protection



Product protection mode

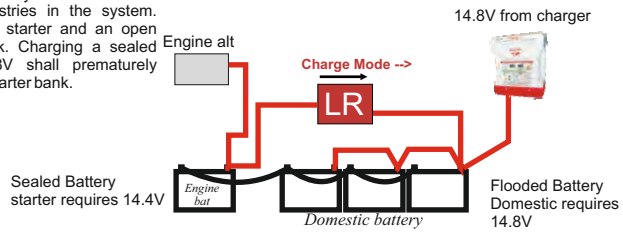


Engine Starter Battery Protection Mode

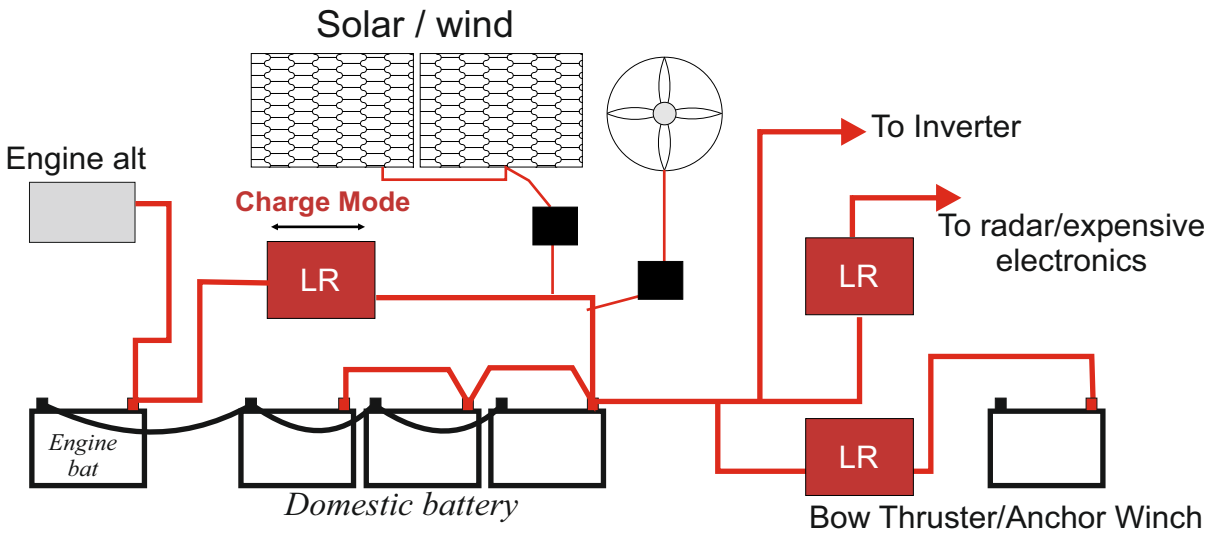


Uni Directional Charging

Sometimes uni directional charging is necessary when you have different battery chemistries in the system. E.g. a sealed starter and an open domestic bank. Charging a sealed bank at 14.8V shall prematurely destroy your starter bank.



Multiple use on small boat



Code	Continuous Current	Max Intermittent Current	Quiescent Current mA	Input Voltage	Output stud	Preset Voltage Battery protect	(can be adjusted if required) Starter Protect	Charging mode
LR80	80A	500A	0.5	12V/24V auto	6 mm	Off 10.9V on 12.8V	Off 12.4V on 13V	on 13.3 off 12.9
LR160	160A	1000A	0.5	12V/24V auto	8 mm	Off 10.9V on 12.8V	Off 12.4V on 13V	on 13.3 off 12.9
LR240	240A	1500A	0.5	12V/24V auto	8 mm	Off 10.9V on 12.8V	Off 12.4V on 13V	on 13.3 off 12.9
LRB80	80A	500A	0.5	B = Budget: Relay only available with a fixed/non adjustable factory setting, non-programmable				
LRR	Latching relay remote with 5 metres of cable, for longer use standard telephone cable extension.							

Electrical Latching Isolation Switches

160 - 640A Models

Electrical Latching Battery isolation switches (ELBs) are used to completely isolate a battery bank to prevent any unwanted current drain from taking place. Typically users want to cut leaking from their starting system and from their appliance system. The key features to look for when selection ELBs are: Continuous rating (A), overload rating (A) and then the current draw when the ELB is on and off. Sterling's ELBs excel in all these key features.
Built to **IP66.**

160A - 640A Latching circuit rating: The products rating are their continuous rating. Work out what the continuous load shall be in order to rate the ELB to the correct specification.

D+ alternator ignition feed safety interlock circuit: If the latch position changes when the alternator is running damage can befall the engine/alternator. To prevent this, a signal override system has been installed. This signal (D+/61/ ign feed) will prevent the switch position changing. Only when the signal has abated (engine turned off) will the latching relay switch.

Cold cranking / engine start: The ELBs can handle 1500A-6000A over 5 seconds and 600A to 2400A over a 30 second cranking period (model dependent).

The battery powering the ELB does not have to be the battery that you wish to isolate.

Up to 50V for the latching circuit: The latching circuit is fine for voltage ratings up to 50V.

The latching circuit and the control circuit are isolated. This is extremely important and means that the unit can latch on the **negative** or the **positive** of the battery that you wish.

Latching relay technology uses no current to stay closed or opened circuited. This means latching relays will not consume current from your system when turned on or off. The switching consumption does use current - about 2A for 0.5 seconds.

480A and 640A models

Key lock optional: the unit comes with a momentary rocker switch to operate the unit, however, you can purchase a key lock option if required.

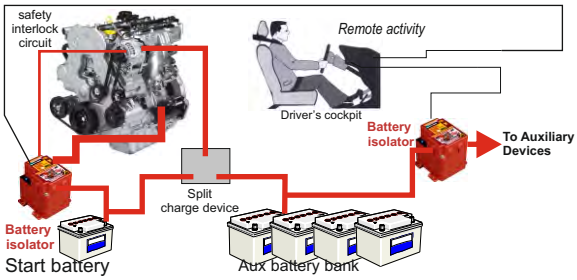
Supplied
3 way rocker switch with Blue LED

Optional
key lock switch

8mm studs ensure good contact for electrical cables.

160A and 240A models

The control circuit is powered by either 12V (low as 8V) or 24V (low as 16V). Due to the low instantaneous power consumption of the controlling circuit you can tap the voltage off a larger bank 36V / 48V bank.



Intermittent			Electrical Battery Isolator				
Continuous rating:	**30 sec**	**Starter rating**	**LWD mm**	**Weight Kg**	**Cont (A)**	**Control V**	**Code**
160A	**300A**	**Not suitable starter**	**90x90x80**	**0.2**	**0**	**12V**	**ELB12160**
160A	**300A**	**Not suitable starter**	**90x90x80**	**0.2**	**0**	**24V**	**ELB24160**
240A	**450A**	**Car/small van**	**90x90x80**	**0.2**	**0**	**12V**	**ELB12240**
240A	**450A**	**Car/small van**	**90x90x80**	**0.2**	**0**	**24V**	**ELB24240**
480A **	**1000A**	**lorry, up to 600hp**	**150x100x120**	**0.4**	**0**	**12V**	**ELB12480**
480A **	**1000A**	**lorry, up to 600hp**	**150x100x120**	**0.4**	**0**	**24V**	**ELB24480**
640A **	**1300A**	**lorry, up to 1000hp**	**150x100x120**	**0.4**	**0**	**12V**	**ELB12640**
640A **	**1300A**	**lorry, up to 1000hp**	**150x100x120**	**0.4**	**0**	**24V**	**ELB24640**
Extra momentary switch (one supplied standard in each kit)							**ELS1**
Key operated switch with 2 keys (optional extra) N.B only momentary switches can be used							**ELKS1**

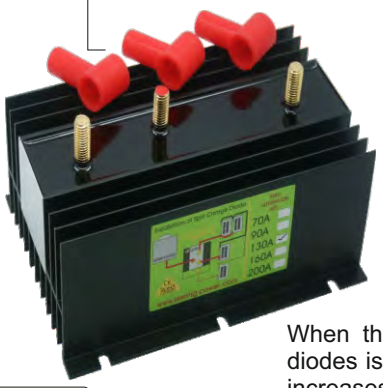
Split Charge Diodes

70A - 200A Models

Sterling power has developed a range of low cost split charge diodes, they benefit from enhanced performance over conventional diodes and at a lower cost.

Recommended to be used in conjunction with an advanced alternator regulator

Over coming voltage drop (0.8V - 1.2V). You can attempt to over come voltage drop across the Pro Split D by using a **Sterling Alternator Regulator**. This shall ensure that the battery bank of designate charge get its correct charging profile.

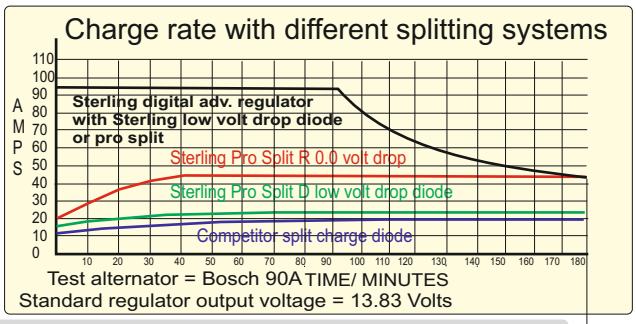


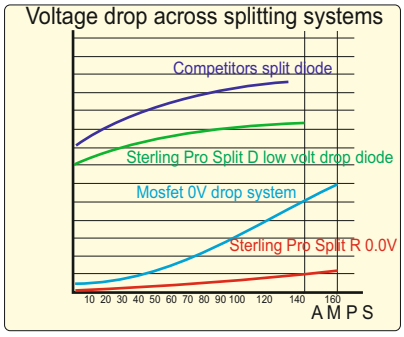
All other split charge diode manufacturers use conventional alternator diodes which, at a low current flow have about a 0.93V drop.

70-200A rating. 2-3 outputs. Relative low voltage drop for diode splitting category.

For improved charging and intelligent charging look at Sterling's **Pro Split R and Alternator to Battery Chargers.**

When the full rated current of these diodes is approached the voltage drop increases to around 0.95V. This results in excessive heat and power loss across the diode.





Low voltage drop split charge diodes

Alternator inputs	Battery banks	Max Alt (A)	Code
1	2	70	D70A2
1	3	70	D70A3
1	2	90	D90A2
1	3	90	D90A3
1	2	130	D130A2
1	3	130	D130A3
1	2	160	D160A2
1	3	160	D160A3
1	2	200	D200A2
1	3	200	D200A3

	Conventional Splitters				Sterling's Pro Split D			
AMPS PASSED (A)	30	50	60	70	**30**	**50**	**60**	**70**
VOLTAGE DROP (V)	0.93	0.95	0.97	1.1	**0.78**	**0.75**	**0.74**	**0.74**
POWER LOSS (W)	27.9	47.5	58.2	77	**23.4**	**37.5**	**44.4**	**51.8**

DC Isolation Switches

Key Features:
Spare Key, Cover seal for switch

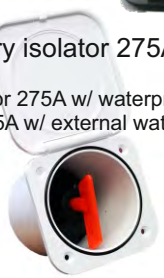
200A continuous
1000A overload
Waterproof cover
12V-24V

300A continuous
2000A overload
10mm studs
12V only

2 pole rotary battery isolation switch
Sterling Part Number
RSW 2 pole rotary battery isolation switch [White]
1x 2 pole rotary battery isolation switch [White]

Battery isolator 275A
Sterling Part Number
BSW275 Battery isolator 275A [WHITE]
1x Battery isolator 275A

Waterproof Battery isolator 275A
Sterling Part Number
BSWW Battery isolator 275A w/ waterproof box
1x Battery isolator 275A w/ external waterproof box.

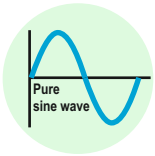


200A Battery Isolator Pro Isolator			
DC (A)	Voltage	Weight Kg	Code
200	12V / 24V	0.1	IS200

300A Battery Isolator Pro Isolator			
DC (A)	Voltage	Weight Kg	Code
300A	12V	0.3	IS300

Pro Combi S+

Combi Inverter Charger



The Pro Combi S+ is Sterling's new inverter charger. It is a bespoke unit that has an attractive new design. The unit is lighter, smaller, yet more powerful than its predecessor. New splash proof design offering some protection against the odd water spill. The Combi S+ also comes with an auxiliary charging output to allow the user to charge their starter battery whilst bulk charging their main battery bank. The auxiliary charging is simply a module that can be installed and allows the user to charge 12V from a 12V or 24V from a 24V or even a combination of them as it is simply a module (e.g. 12V from a 24V unit), unit built to **IP22**.

Remote control panel included. The remote is removable and can be replaced with a blank panel. The switch panel can then be remotely mounted using the supplied extension lead (10 meters).

8 Battery type selectors.
All with their own 4 stage charging profiles.

Features a power saver function and battery charger power reduction. Great for smaller power supplies and gensets.

30A automatic crossover switch: If shore power is connected to the Combi, the unit allows you to run your appliances directly from the shore power. However, when shore power is disconnected, the unit transfers the load from shore power to inverter power in less than 20ms, ensuring a smooth un interruptible power supply.

The Battery chargers across the range are larger in current rating. 50A at 12V.

Picture of 1600VA model

Battery Charger only select option. Allows unit to be set, so in event of shore power failure the inverter does not engage.

Neutral - Earth bonding link when on inverter mode to comply with latest regulations. This allows RCD breakers to work.

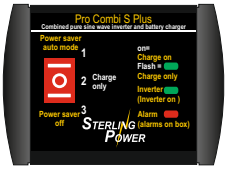
New, lighter and smaller unit. Refer to the weights and dimensions in the table below. No extra length attributed to end cover caps etc as all AC and DC connectors are now neatly integrated into the unit.

The additional 5A auxiliary charging output port is a new feature of the S+ model. It allows the user to charge the starter battery (example). Also, you can pick and mix. For example, have a 12V main unit with a 24V output port, or vice versa.

Power Factor Corrected (PFC)
This unit delivers a unity (0.99) power factor.

Extremely low quiescent current
From 0.1A with power saver on.
0.5A with power saver off.

Comes with remote extension cable (10m), adaptor, blanking plate and necessary screws.



Remote control panel included. The remote is removable and can be replaced with a blank panel. The switch panel can then be remotely mounted using the supplied extension lead (10 meters).

Under the cover. AC and DC connections. Tucked away neatly and safely.

DC Voltage (V)	Nominal VA	Continuous Power @ 20degC (W)	Charger (A)	Dimensions (L x W x D) mm	Weight (Kg)	Code
12	1600	1300	50	225 x 205 x 230	8.5	PCSP121600
	Auxiliary Charge Module	12V Combi to 12V Battery	5A			ACM12

Pro Combi S 2500W / 3500W

Combi Inverter Charger

Due to the demand for this Pure Sine Wave Combi Inverter / Charger we're keeping this institution in for more years to come. It is a solid, reliable work horse, that appears everywhere. Narrowboats, RVs, boats, commercial vehicles and ice cream vans all use it.

Features a power saver function and battery charger power reduction. Great for smaller power supplies and gensets.

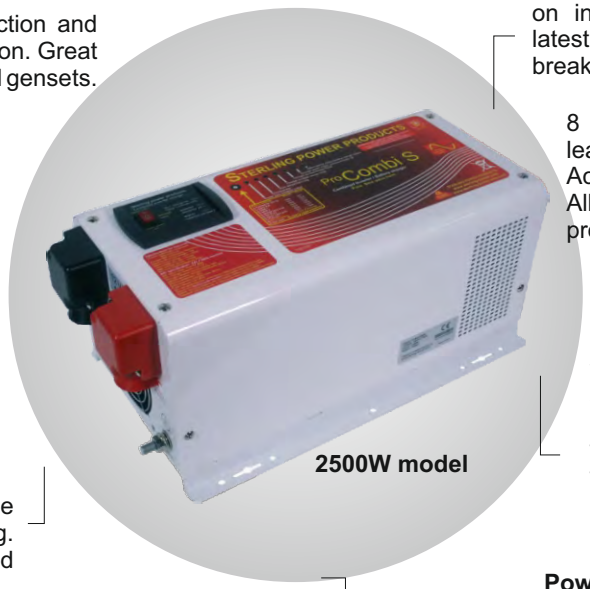
Under the cover. AC and DC connections. Tucked away neatly and safely.

Sterling Power's Combi S+ range of Inverter / Chargers are new to 2016. They arrive in a bespoke and attractive waterproof enclosure (IP55).

The Battery chargers across the range are larger in current rating. 80A for the 2500W model and 100A for the 3500W (at 12V).

Online Current consumption for 12V 2500 as low as 1.2A. Now fitted with new TX transformer results in 50% less quiescent current.

3500W 12V = 4.5A and 24V = 3A.



2500W model

Familiarity - we have had this Combi style for 10 years. It is proven and ubiquitous.

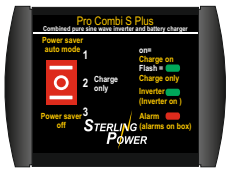
Neutral - Earth bonding link when on inverter mode to comply with latest regulations. This allows RCD breakers to work.

8 Battery type selectors. Sealed lead acid, Gel, AGM, open Lead Acid, Calcium.
All with their own 4 stage charging profiles.

30A automatic crossover switch: If shore power is connected to the Combi, the unit allows you to run your appliances directly from the shore power. However, when shore power is disconnected, the unit transfers the load from shore power to inverter power in less than 20ms, ensuring a smooth uninterruptible power supply.

Power Factor Corrected (PFC)
This unit delivers a unity (0.99) power factor.

Battery Charger only select option. Allows unit to be set, so in event of shore power failure the inverter does not engage.



Remote control panel included. The remote is removable and can be replaced with a blank panel. The switch panel can then be remotely mounted using the supplied extension lead (10 meters).

3500W model

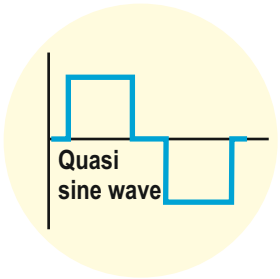
10m of remote cable, adaptor, DC and AC covers and planking plates all included.

DC (V)	Power (W)	Charger (A)	Dimensions (L x W x H)	Weight (Kg)	Code
12V	2500W	80A	380mm x 220mm x 190mm	18	PCS122500
12V	3500W	100A	510mm x 230mm x 190mm	27	PCS123500
24V	2500W	35A	380mm x 220mm x 190mm	18	PCS242500
24V	3500W	50A	510mm x 230mm x 190mm	27	PCS243500

Pro Power Q

100W - 5000W Quasi Sine Wave Inverters

Pro Power Q are Sterling's range of quasi / modified sine wave inverters. Quasi sine wave inverters work with most electrical appliances, including: hair dryers, phone, computer chargers, microwaves, kettles etc. Exceptions to this are appliances which are thyristor controlled, for example, washing machines or bread makers. It's the responsibility of the buyer to ensure that any products to be used on Quasi sine wave inventers is rated to do so. Some products do not work and can be damaged with this wave form.



1800W

350W
600W
800W

Come with 24Kt gold plated connectors

230V 50Hz and **110V 50Hz.** UK / Europe domestic use and building site use Europe, and 110V 50Hz for building sites.

Relatively small footprint for the power size.

Cost Effective: Works out at around half the price of the Pure Sine Wave inverter. Yet it works with around 95% of electrical products.

All inverters come pre-wired.

The new turbo can inverter. Can lie flat or fits in standard cup holders in cars, lorrys vans etc.

Universal sockets available on some products.

e13 Automotive type approval

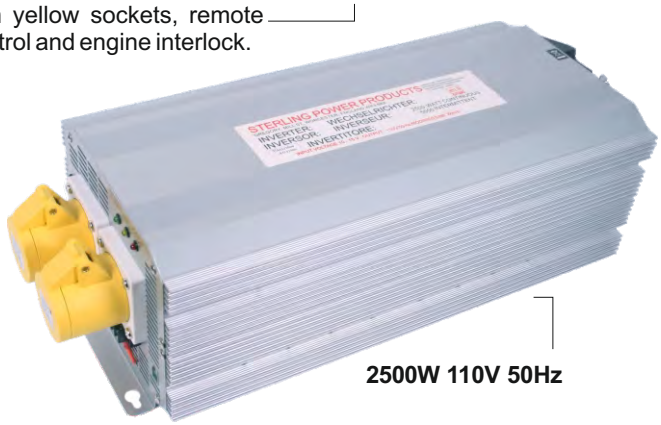
Quiet operation due to new larger fan.

100W - 200W

1800W - 2500W

1800W 110V 50Hz

110V / 50Hz models come with yellow sockets, remote control and engine interlock.



2500W 110V 50Hz

230V 50Hz 12V DC Quasi Sine Wave Inverters					
Socket Type	**DC (V)**	**Power (W)**	**Size LxWxD mm**	**Weight (Kg)**	**Code**
Universal	12V	100W	145L x 65 dia.	0.2	I12100
Universal	12V	150W	145L x 100 dia.	0.3	I12150
British / Euro	12V	150W	145L x 100 dia.	0.3	I12150CT
Universal	12V	200W	145L x 65 dia.	0.3	I12170T
British / Euro	12V	350W	150 x 150 x 65	1.0	I12350
British / Euro	12V	600W	230 x 150 x 65	1.3	I12600
British / Euro	12V	800W	270 x 150 x 65	1.8	I12800
1000-2700W Inc Remote control and 5 metres of cable					
British / Euro	12V	1000W	240 x 250 x 100	2.0	I121000
British / Euro	12V	1800W	300 x 250 x 100	4.0	I121800
British / Euro	12V	2700W	370 x 250 x 100	5.0	I122700
British / Euro	12V	4000W	700 x 250 x 250	10.0	I124000
British / Euro	12V	5000W	700 x 250 x 250	10.0	I125000

230V 50Hz 24V DC Quasi Sine Wave Inverters					
Socket Type	**DC (V)**	**Power (W)**	**Size LxWxD mm**	**Weight (Kg)**	**Code**
Universal	24V	100W	145L x 65 dia.	0.2	I24100
Universal	24V	150W	145L x 100 dia.	0.3	I24150
British / Euro	24V	150W	145L x 100 dia.	0.3	I24150CT
Universal	24V	200W	145L x 65 dia.	0.3	I24170T
British / Euro	24V	350W	150 x 150 x 65	1.0	I24350
British / Euro	24V	600W	230 x 150 x 65	1.3	I24600
British / Euro	24V	800W	270 x 150 x 65	1.8	I24800
1000-2700W Inc Remote control and 5 metres of cable					
British / Euro	24V	1000W	240 x 250 x 100	2.0	I241000
British / Euro	24V	1800W	300 x 250 x 100	4.0	I241800
British / Euro	24V	2700W	370 x 250 x 100	5.0	I242700
British / Euro	24V	4000W	700 x 250 x 250	10.0	I244000
British / Euro	24V	5000W	700 x 250 x 250	10.0	I245000

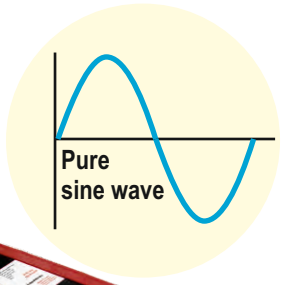
110V / 50Hz yellow sockets / remote control / engine interlock					
Socket Type	**DC (V)**	**Power (W)**	**Size LxWxD mm**	**Weight (Kg)**	**Code**
Yellow 16A	12V	1800W	310 x 250 x 100	2	AI121800
Yellow 2x16A	12V	2500W	420 x 250 x 250	4	AI122500
Yellow 16A	24V	1800W	310 x 250 x 100	2	AI241800
Yellow 2x16A	24V	2500W	420 x 250 x 250	4	AI242500

1000W-2700W models include a remote control with10 metres of cable. Code: **SWR**

e8

Pro Power SB

200W - 5000W Pure Sine Inverter Range



Pure Sine Wave Inverters. Replicates true shore power, suitable for all appliances.
- With Twin Socket or built in RCD.
- **Neutral Earth Bonding.**
- **DC cables supplied on 200W - 600W models.**
- **No DC cables supplied on 1000W - 5000W models.**

230V / 50Hz
200W - 1600W
RCD optional

Option 1
Twin socket - Euro (Schuko) + UK.
USB 2A / 5V

Option 2
Pre-wired RCD w/ 1m AC cable.
USB 2A / 5V

230V / 50Hz
3000W - 5000W
inc built in RCD

110V / 50Hz Yellow Socket for site use
12V / 24V 1600W models.

Optional remote control
with 5 metres of cable.

4 Digit display:
1) Power - Wattage
2) Voltage

110V 50Hz Model
2200W model shape

230V Pure Sine Wave 50 Hz AC inverters 12V DC and 24V DC 200W - 2200W					
Voltage	**Power**	**Weight**	**Size L x W x Dmm**	**Cables**	**Code**
12V	200W	1.4Kg	210x190x85	1m Cig Plug	SIB12200
12V	300W	1.4Kg	210x190x85	1m DC 8mm ring	SIB12300
12V	600W	2.0Kg	250x190x85	1m DC 8mm ring	SIB12600
12V	1000W	2.2Kg	300x190x85	8mm connection	SIB121000
12V	1600W	3.6Kg	300x190x85	8mm connection	SIB121600
12V	2200W	4.5Kg	300x220x85	8mm connection	SIB122200
24V	200W	1.4Kg	210x190x85	1m Cig Plug	SIB24200
24V	300W	1.4Kg	210x190x85	1m DC 8mm ring	SIB24300
24V	600W	2.0Kg	250x190x85	1m DC 8mm ring	SIB24600
24V	1000W	2.2Kg	300x190x85	8mm connection	SIB241000
24V	1600W	3.6Kg	300x190x85	8mm connection	SIB241600
24V	2200W	4.5Kg	300x220x85	8mm connection	SIB242200
Option 2 Pre-Fitted with RCD and with 1 meter AC cable					
12V	300W	1.5Kg	250x190x85	6mm connection	SIBR12300
12V	600W	1.8Kg	360x190x85	6mm connection	SIBR12600
12V	1000W	2.0Kg	300x190x85	8mm connection	SIBR121000
12V	1600W	3.6Kg	300x190x85	8mm connection	SIBR121600
12V	2200W	4.5Kg	300x220x85	8mm connection	SIBR122200
24V	300W	1.5Kg	250x190x85	6mm connection	SIBR24300
24V	600W	1.8Kg	360x190x85	6mm connection	SIBR24600
24V	1000W	2.0Kg	300x190x85	8mm connection	SIBR241000
24V	1600W	3.6Kg	300x190x85	8mm connection	SIBR241600
24V	2200W	4.5Kg	300x220x85	8mm connection	SIBR242200
230V Pure Sine Wave 50 Hz AC inverters w/ RCD 12V DC and 24V DC 3000W - 5000W					
12V	3000W	6.2Kg	450x256x185	No Cables	SIB123000
12V	4000W	7.0Kg	550x256x185	No Cables	SIB124000
12V	5000W	7.6Kg	550x256x185	No Cables	SIB125000
24V	3000W	6.2Kg	450x256x185	No Cables	SIB243000
24V	4000W	7.0Kg	550x256x185	No Cables	SIB244000
24V	5000W	7.6Kg	550x256x185	No Cables	SIB245000
110V / 50Hz model 1600W with Yellow Socket					
12V	1600W	3.6Kg	300x190x85	8mm connection	ASIB121600
24V	1600W	3.6Kg	300x190x85	8mm connection	ASIB241600
Remote control (fits all models)			90x60x20	5 metre	SWR

Power Management Panel

Up to 400A continuous, 1000A overload.

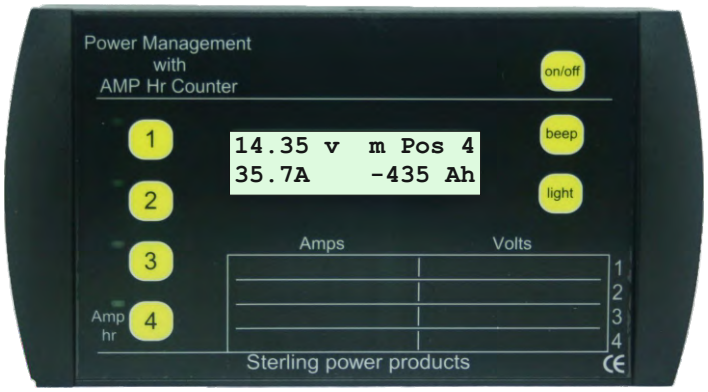
The power management panel (PMP) is designed to display all the vital electrical information on an average boat. This enables important decisions to be made regarding faults and general onboard DC electrical power management. The information obtained also helps any third party engineer to identify problems.

4 comprehensive channels. Comprised of 4 voltmeters and 4 ammeters. There is one channel dedicated to Ah reading.

Built in Ah counter. This allows the user to measure the capacity remaining in their respective bank. Totally automated function - no user intervention required.

Each panel comes with a 200A /100mV shunt. (up to 3 extra shunts may be purchased) and a list of labels for the panel front.

Background light for perfect legibility in day and night times.



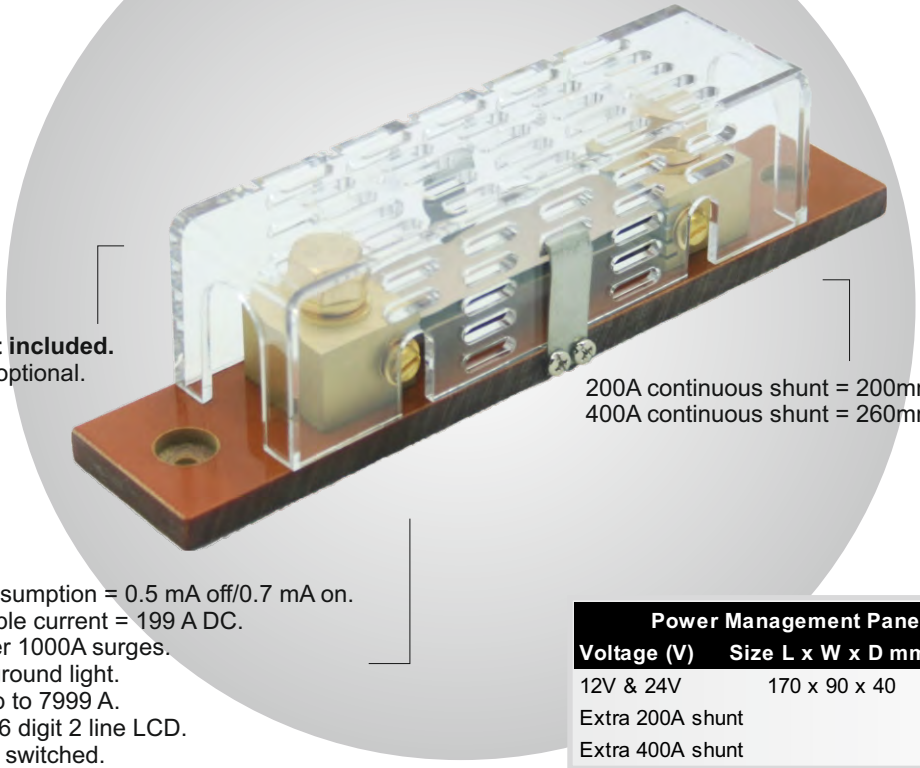
Shunts can be connected to positive or negative cables.

The panel can either be surface or flush mounted.

Each panel comes with one 200A /100mV shunt. Additional shunts can be purchased along with a list of labels for the panel front.

100mV shunts enable all current measurements to take place remotely from the instrument clusters, removing all the voltage drop and RFI problems associated with running heavy duty cables up to a control panel and navigation instruments.

Shunt size:
200A shunt is ideal for 2000W / 24V inverters.
400A shunts are ideal for 4000W / 12V inverters.
The shunts have a very high instant load ability which makes them fine for cranking ~1000A.



200A Brass shunt included.
400A Brass shunt optional.

200A continuous shunt = 200mm x 40mm x 50mm
400A continuous shunt = 260mm x 55mm x 50mm

Power Consumption = 0.5 mA off/0.7 mA on.
Max readable current = 199 A DC.
Safe to over 1000A surges.
LED Background light.
Ah rated up to 7999 A.
Screen = 16 digit 2 line LCD.
Back light / switched.
Accuracy = + or - 1%.

Power Management Panel			
Voltage (V)	**Size L x W x D mm**	**Weight Kg**	**Code**
12V & 24V	170 x 90 x 40	0.25	PMP1
Extra 200A shunt			S200A
Extra 400A shunt			S400A

Portable Meters

DC Clamp Meter (ammeter)	
Dimensions	160mm x 35mm x 25mm
Weight	100g
Electrical Specification:	Meets IEC 1010 CAT111
DC voltage	0-200V overload protection 600V
AC voltage	0-500V overload protection 600V
DC current	0-600A overload protection
AC current	0-600A overload protection
Resistance	0-200 ohms overload protection 400
AC frequency response	40-400 Hz
AC speck tested on sine wave	50/60 Hz
Compact yet heavy duty	
Continuity beeper	
Data hold function	

Code
CLAMP1

Wind up / **No batteries**
Ideal for boats / campervans
for infrequent use

Wind Up Multimeter (no battery)	
Winding	Wind twice for 2mins use, wind for 10s for 10 mins
Display	46 mm x 23 mm large LCD
Measurement	AC, ACA, DCV, DCA, Ohms, continuity beeper, Hz, %, Cap
Dimensions	152 x 78 x 45 mm
Weight	350g
DC voltage	Range Volts 400.0 mV - 1000V DC Accuracy +/- (1% + 3d)
Input impedance	10 M Ohm
DC current measure	400mA - 10A
Ohms	400-40 M ohm
Capacitance	40nF-100 mF
Frequency	4 Hz - 4 MHz
Diode	(forward voltage , VF)
Range	4 V DC
Resolution	0.001 V
Test voltage	1.6V DC
Test current	1 +/- 0.6 amps
Includes red and black test leads plus instruction manual	
Continuity Beeper	
Overload Protection Fuse	
Beep if resistance less than 100 ohm	
response time < 100 m	
Range selection Auto ranging with manual selecting.	
Data hold to freeze the display reading	

Code
WUVM

DC Voltage Probe & Diagnostic Tool	
Available voltages	12V / 24V
Battery Condition Reading	Low 11.5V / 50% 12.0V / Full 25.2V (24V x 2)
Charger / Alternator output	13.2V (min) / 14.5V (max) / 15.5V (over volt) (24V x 2)
Weight	250g
Unique to Sterling Power	

Code
TM12V 12V
TM24V 24V

Digital Battery Testers

Includes alternator and starter motor tests

What does the tester do?
To properly test a battery you need to test the voltage of it under a heavy load. This is what the Digital Battery Tester (DBT) does. The DBT puts a 125A load on the 12V battery for 10 seconds. It measure the rate of recovery of the battery's voltage after the load has abated. The faster the recovery the healthier the battery. Superb device for measure battery condition.

10s Load test	125A
Voltage	12V (for 24/36V center tap)
Battery CCA rating	200-1000A
Battery Ah rating	30-140Ah
Indications	good / weak / bad / sulphation extent
Battery Voltmeter	yes
High Voltage trip	13V
Time between loads	120 seconds
Uses	Batteries, Alternators, Starter Motors
DC Cable length	530mm
Size (LWD)	280mm x 100mm x 120mm
Weight	1.1 Kg

Code
DBT125

The load test. Depending on the size of the battery, this product adds a very high load to the battery (125A). The battery should be able to deliver this load and hold the voltage up at the same time. If the battery is unable to deliver the load (and sustain it for this time frame) then the battery is either defective or simply not fully charged when the test was performed. This is why it is crucial to ensure the batteries are fully charged before the test is performed to eliminate that possibility.
The unit can also be used to measure the performance of the charging device (alternator / battery charger) - to inform the user whether the charging device is **good, weak or bad**.

Multilingual display comes with options for English, Spanish, Italian, French German and Polish.

Battery does not need to be fully charged for this test

Provides battery information
Health off the battery in %
Battery charge %
Internal resistance
Battery rating (A)
Cranking test voltage and
Cranking time, a charge voltage
Diode test.

Transfers data to
PC easily via mini USB

Voltage Measure Range of 7-30VDC

Housed in **ABS Acid resistant plastic**

An Ah Measure Range of 30-200Ah

Code
DBT12D

Multiple modes from the home screen, including battery testing, system start tests, system charging tests, battery test results, print test results and language select.

Voltage & Temperature Monitoring System.

With Alarm

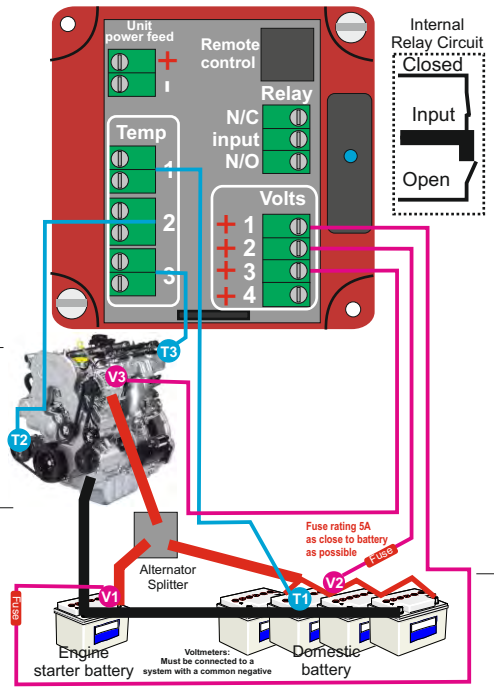
The voltage & temperature monitoring system measures 4 voltages and 3 temperatures. Not only can the unit monitor, it can also have each channel alarm at specific levels. The high and low voltage alarms and the high temperature alarms can be set by the user. When the unit alarms, a relay circuit can be activated to induce a response.

Manual lock or auto scan. The unit will, on default, simply scan through all 4 voltage and 3 temperatures remaining on each parameter for about 3 seconds. You have the option to allow continuous scan or simply lock the display on the one screen. Please note that even if you have locked the display on one parameter all the other parameters are still being scanned. If there is an alarm on one of the other channels while you have it locked onto a different channel the alarm will breakthrough. After you acknowledge the alarm the previously locked screen will return automatically.

Lock unit. For security, there is the ability to lock the settings by a code. In the case you have locked the unit it will only be possible to cycle through the displays on the screen and to mute an alarm.

Low voltage saving. The lowest voltage for each channel will be saved. The voltage has to remain at this level for minimum 10 minutes to be saved. This prevents the use of anchors / bowthrusters influencing the low voltage point, as these devices are only transient. This value can be deleted to run a new low voltage monitoring.

Removing unwanted alarms. There is an upper (voltage + temperature) and lower voltage alarm (voltage) for each setting. You may not wish to engage some of these alarms, you can simply remove any alarms you wish not to use.



Supply voltage: 8 - 35VDC
Current consumption: < 3mA
Temperature range: 10 - 150 Deg C

Relay Circuit. There is a relay offering normally closed (N/C) or normally opened (N/O) switching. This can then be used to activate whatever you wish to upon the alarm levels being reached.

We predict this relay circuit shall be used to start up generators when the batteries get down to a certain voltage. Other examples, using temperature, would include an engine switching off under high system temperatures. There are an array of examples.

Background LED lights will only stay on in auto mode when the system has surplus power i.e. it's charging.

Special Generator start ability. Switching a relay to activate a generator is quite simple. However, knowing when to stop it is more difficult. There are numerous options to stop the generator based on voltage, temperature or time. For instance you may wish to stop the generator when the batteries hit a certain voltage / temperature / after a set time. There is also a safety timeout setting to prevent the generator staying on indefinitely because the battery charger has failed.

Automatic backlight colour change. The backlight can change its colour automatically if the colour change value has been tripped.

In a 12V system: <12.2V = red, <13.2V = green, <15V = blue, >15V = red.

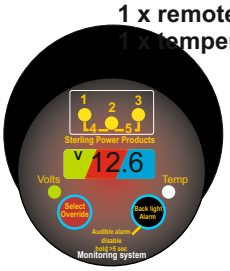
These values can be changed for each channel individually.

Setting degree C or degree F scale.

Buzzer alarms: for any alarms the buzzer can be on or off. If on, the alarm can be muted.

Remote Control:
Backlight colour user selectable (blue, red or green) or Auto select, changes colour based on alarms or conditions.
Screen alarms: for any alarms the screen will display a red screen.

Kit includes:
1 x control box
1 x remote control
1 x temperature sensor



Voltage Temperature Monitoring			
Input DC (V)	Size L x W x D mm	Weight kg	Code
12-24V	70 x 70 x 60	0.2	TVM1
Extra temp sensors (1 included) purchase more			TS1

Battery Maintainer.

Echo / mirror charger

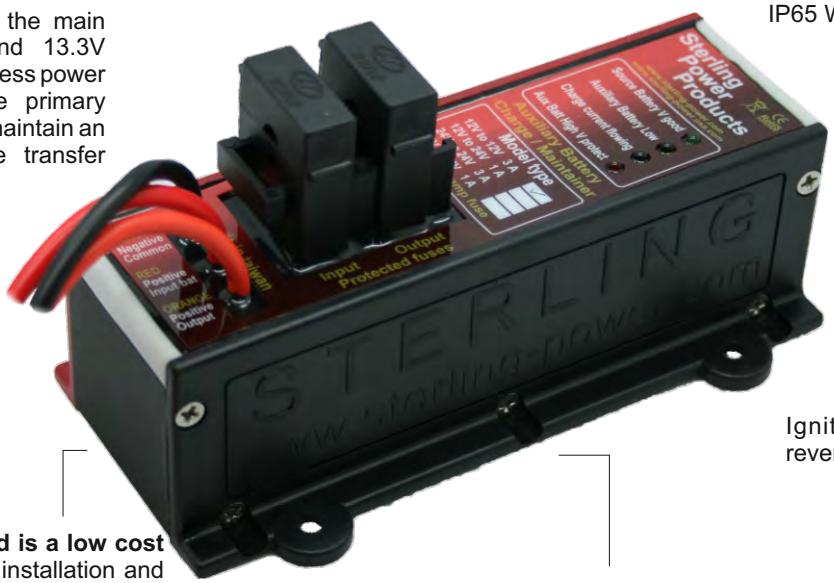
The battery maintainer is a charging device that enables an **extra battery bank** to be kept 'topped up' from the **main battery bank** which has the charging device(s) connected to it (e.g. alternator, battery charger, solar cell / wind turbine etc). The unit transfers approximately 3A (12V) and requires the charging devices to be turned on to work. It is best suited at keeping a starter battery topped up and maintained by the charge that your house bank receives.

Do not use this product as a battery charger, it should only be utilised as a trickle charger.

Ideal for use on Boats, Camper vans and with Solar / Wind top up.

IP65 Waterproof (rated to)

How does it work?
The unit is activated when the main battery has reached around 13.3V (26.6V at 24V) and allows excess power to be transferred from the primary charging system to charge / maintain an auxiliary battery bank. The transfer current is 3A at 12V.



4 options:
12V to 12V
12V to 24V
24V to 24V
24V to 12V

Ignition protected and reverse polarity protected.

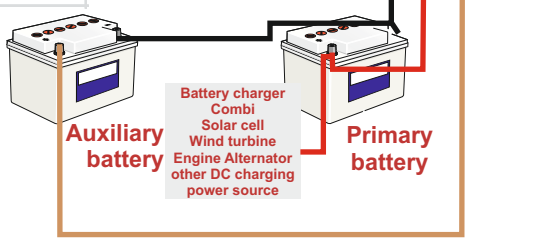
It is simple to install and is a low cost product. Saving time on installation and money on repeatedly replacing destroyed flat batteries.

Power Saving. The battery maintainer uses FETs instead of relays and as such uses very little power itself (less than 1mA). This allows your solar harvest to be more efficiently distributed rather than lost across inefficient relays.

Other Specifications	
Offline power consumption	0.001A
Online power consumption	1mA
Activation voltage input battery (x 2 for 24V)	13.3V
High voltage trip on input battery (x 2 for 24V).	15V
high temperature lock down (Deg C)	80
Off Voltage and Standby input battery (x2 for 24V)	12.9V
Reverse polarity protected (fuse).	
Aux battery 'low voltage' warning LED on if aux bat below 12.6V and 'off' above 12.7V.	

Battery maintainer / charger inc 1 metre of cable

Input (V) DC	Output (V) DC	Current (A)	L x W x D mm	Weight Kg	Code
12V	12V	3A	140 x 45 x 40	0.25	BM12123
12V	24V	1A	140 x 45 x 40	0.25	BM12241
24V	24V	3A	140 x 45 x 40	0.25	BM24241
24V	12V	1A	140 x 45 x 40	0.25	BM24121

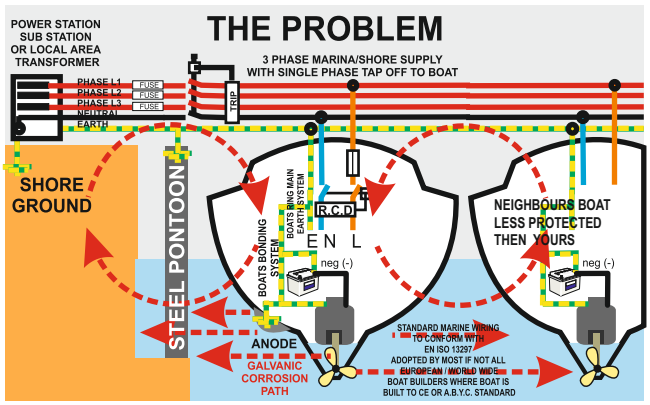


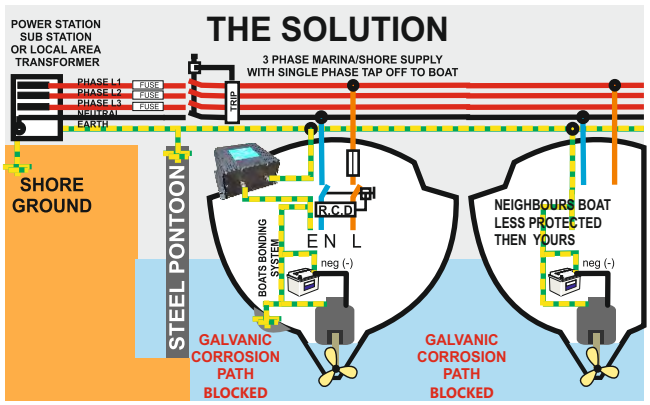
Pro Save Range

Galvanic Isolators / Zinc Saver 16A - 120A Range

In order for modern boat builders to comply with modern CE standards such as EN ISO 13297 they must fit the shore earth wire to your boats bonding system which is also connected to the hull / anodes etc. This ensures that any 230V mains faults will operate the R.C.D on the boat in order to save your life. However, now your boat is connected to the rest of the boats in the marina. This results in 2 main problems. Firstly, any increase in voltage on any earth in the marina may result in the dissolving of your anodes. Secondly, if you have a zinc / magnesium / aluminium anode on your boat and the boat next to you (or marina) does not then your boat shall be protecting everyone resulting in dramatic losses of anode.

The solution, Sterling's **Pro Save**. The zinc savers maintain the continuity with the earth to ensure safety (EN ISO 13297 standard) but prevent any stray currents coming up the earth. The Pro Save has to be built to stringent testing and has to be able to carry its current rating for 24 hours without exceeding 90 degrees centigrade.





16A 30A 50A models

Rate to AC shore power rating.
Small Marinas 16A.
Medium Marinas 30A.
Large Marinas 50A.

ZS16A Model

For European use only due to ABYC non compliance.

Refer to overleaf for USA model ABYC compliant.

ZS30A / ZS30C models

Available with or without Internally installed capacitors. **The 30A and 50A models have 25,000uF 2.5V capacitors installed.**

This raises performance in extreme AC leakage conditions.

ZS50A / ZS50C models

Galvanic Isolators / zinc savers Standard euro version

AC (A)	Size mm	Weight Kg	Code
16	120 x 100 x 90	1.0	ZS16A
30	220 x 120 x 100	1.5	ZS30A
50	220 x 165 x 100	1.8	ZS50A

Galvanic Isolators / Zinc Savers Standard Euro Version with Cap

AC (A)	Size mm	Weight Kg	Code
30	220 x 120 x 100	1.5	ZS30C
50	220 x 165 x 100	1.8	ZS50C

Pro Save W

Waterproof Zinc Saver up to 110A

built to
IP66
WATERPROOF
Electrics
IP55
Replaceable fan

The new range also offers two LED warning lights. The two warning lights indicate the following:
1) To indicate if there is a break through fault. For instance, if the earth voltage has exceed the ability of the device to protect the boat's system (very rare this would ever be the case).

2) Total failure due to massive short circuit way beyond the products ability to protect. The product has failed and the boat and personnel are in danger. If this fault is triggered, there are underlying issues beyond that of the normal safety features of the shore power system. The over engineered aspect of this product cannot be overstated.

The new Pro Save W offers all the same great protection as the Pro Save A+C models but in a new waterproof plastic package:

110A model

Safety first:
This product complies fully to European standard EN ISO 13297. Not to be used where UL / ABYC fail safe standard are required.
See below.

In fault condition the product does not exceed 90 deg C, during tests the product 24 hr fault temperature was sustained well below:

Stainless steel hardware and very low footprint, made possible by a new induction fan cooling system which only operates when the unit is in a major fault condition.

EN ISO 13297
Small Craft Directive

Waterproof Zinc Saver off fault plus 20%		
Model	Fault Current (24 hours)	End Temp (Deg C)
32A	41A	65
64A	85A	78
110A	152A	75

Waterproof Galvanic Isolator / Zinc Savers				
AC (A)	Size L x W x D mm	Weight Kg	Connector	Code
32	150 x 120 x 118	1.0	6 mm	ZSW32
64	150 x 120 x 118	1.0	6 mm	ZSW64
110	155 x 170 x 118	1.8	8 mm	ZSW110

32A / 64A model

AC Auto / Manual Crossover Switches

AC Automatic Switch 230V/110V-32A

The **Pro Switch 32** is a 3 input 32A automatic crossover switch. It is designed to enable the user to connect 3 sources of AC to a central box (Pro Switch). The output of the Pro Switch is then intended to be directed to your ring mains. The 3 sources could be from shore power, an inverter and a generator. The Pro Switch prioritises the 1st input (typically shore power). It will then automatically switch to the neighbouring inputs when required.

3 Channel Sequential Switching. Channel 1 is priority (typically shore power). Channel 2 is typically a generator. Channel 3 is typically an inverter. If the inverter and/or generator is connected along with shore power, shore power is priority.

Shore Supply AC
Up to 7000W continuous 32A, 230V AC

Generator AC
Up to 7000W continuous 32A, 230V AC.
10 sec delay on the start up to allow generator stabilization before engaging gen set (on gen set chanel only)

32A Internal Switch. Switches live and neutral with a 0.5 sec time delay to prevent wave doubling of the voltage and destroying sensitive equipment.

Inverter AC
Up to 7000W continuous 32A, 230V AC.

230V or 110V AC. Either voltage scale can be used and can be mixed.

Remote on/off:
This switch enables the shore power to be switched 'off' in the event of it not being powerful enough so that the more powerful inverter or onboard generator could do the job.

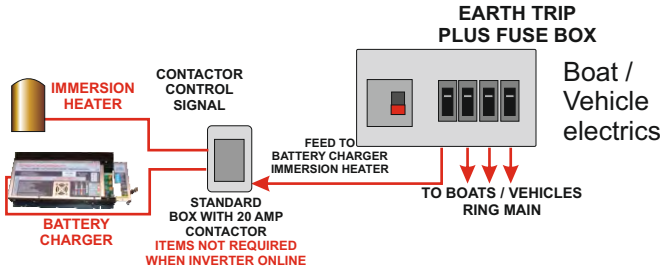
Multiple internal power sources. The Pro Switch powers itself from the connect AC supplies not from the DC batteries.

Other Features:
Includes a 10s time delay on the generator line to all generator start up.

Faults / Reverse Polarity check:
The unit will show if there is reverse polarity on channel '1' which is assumed to be the shore supply system.

Pro Switch 32A 110-230V AC Auto Crossover	
Description	**Code**
Main control box	AC32A
Extra 230V / 20A contact relay	CON1

Optional 230V/20A
Contact Relay



Manual 16A/30A/50A 3 way crossover switch

Ideal where 3 power sources are used such as inverters, shore power and generator on a boat / vehicle

Easy to use
Easy to install
Front panel waterproof

Supplied with 2 shafts for thin panel mounting and ½ panel mounting.

Manual 230V Crossover Switches					
Input sources	**Output**	**Continuous (A)**	**Max Voltage (V)**	**Number of poles**	**Code**
3	1	16	300	3	SC16A
3	1	32	300	3	SC32A
3	1	50	300	3	SC50A

Pro Pulse

Battery De-sulphation & Maintenance device

Prolongs battery's life by up to 100% and improves battery performance: Sulphate build up on plates reduces the batterys life span and performance.
By connecting a Pro Pulse this sulphate is removed and allows the battery to live longer and have greater performance.

Connect across 12V: The Pro Pulse reverse feeds a small electrical pulse back into the battery which prevents and also reverses sulphation on the battery plates.

This is not a battery charger and it cannot actually charge your batteries, it is a de-sulphation device.

By keeping the plates clean and free from sulphation the battery stays fresh and responsive to charging and discharging.

New Models good for up to 500Ah battery bank at 12V.

Waterproof IP66 (built to).

Offline current draw 1.8mA

Not required if you already have an advanced battery charging system from Sterling as they have desulphation cycles built into their charging profiles.

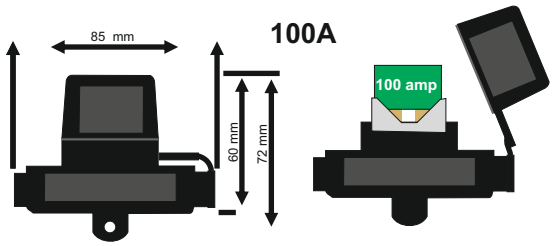
Model good for up to 150Ah battery bank at 12V.

Rejuvenates older battery(s) and sharpens their response. This allows them to accept faster charge and preserves their cold cranking ability.

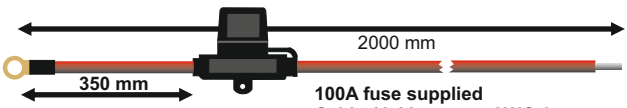
Requires a charging source to operate. It shall not deplete your battery bank. Operation voltages are 13.3V+ (at 12V) and 26.6V+ (at 24V).

Description	Size mm	Weight kg	Code
De-sulphation unit 12V - up to 150Ah bank (IP66)	90 x 90 x 60	0.2	PPW12150
De-sulphation unit 12V - up to 500Ah bank (IP66)	90 x 90 x 60	0.2	PPW12500
De-sulphation unit 24V - up to 250Ah bank (IP66)	90 x 90 x 60	0.25	PPW24250

2M Pre-fused (80A / 100A) Cables



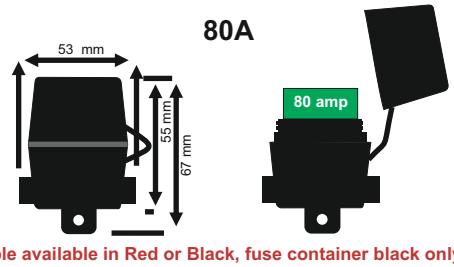
Cable available in Red or Black, fuse container black only.



100A fuse supplied
Cable 13.33 mm sq AWG 6
Total length 2M
8 mm ring terminal
Tin soldered other end

Code	Description
FRAWG6	AWG 6 Pre-fused (100A) Pre-wired, (2m), RED
FBAWG6	AWG 6 Pre-fused (100A) Pre-wired, (2m), Black

IP66
WATERPROOF
IF INSTALLED
VERTICALLY
AS PER DRAWING



Cable available in Red or Black, fuse container black only.

80A fuse supplied
Cable 8.33 mm sq AWG 8
Total length 2M
8 mm ring terminal
Tin soldered other end

Code	Description
FRAWG8	AWG 8 Pre-fused (80A) Pre-wired, (2m), RED
FBAWG8	AWG 8 Pre-fused (80A) Pre-wired, (2m), Black

Daisy Chain - Temperature alarm

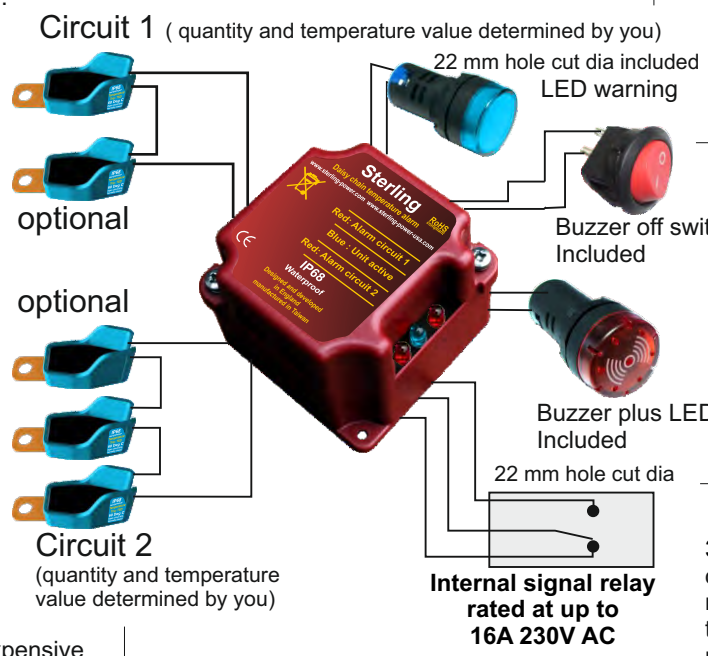
Most problems caused on engine systems can be pre-empted and stopped before any catastrophic failure takes place. Many of these failures are caused by run away temperature rises on batteries / hydraulic systems / bearings etc. The Daisy Chain can be installed in these key areas and an alarm is sounded and/or a relay triggered to prompt a response.

How does it work?
1 to 100 digital normally closed switch temperature sensors can be added in series. If any one of these sensor alarms (open circuits. The temperatures can be mixed within the same chain.

The Daisy Chain is a trip/warning device to indicate when a safe working temperature has been exceeded - this prompts a response from you or a preset automatic response.

This product should be seen as a final response alarm where some major action is required to save the day.

Built to IP66 waterproof



Where would I use this?
A typical use would be if your batteries are prone to over heating due to one being defective. Use a 60 Deg C sensor on each battery within the bank and the unit will inform you of over temperature on the bank.

Included:
1x Remote LED
1x Buzzer (w/ LED)
1x Switch (Buzzer off)

Multiple components are optional.

3 outputs signal relays offers both open circuit relay or a closed circuit relay. When the alarm is triggered the relay switches to prompt the response. This relay is rated to 16A.

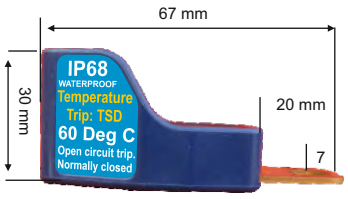
Could be used to switch of an engine or turn off a battery charger (preferably via a contacter).

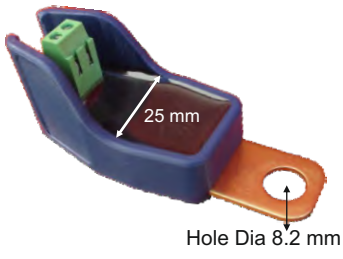
Sterling has a more expensive version which looks at actual temperature and temperature rises. It also has remote display for the temperatures, look at the Sterling Voltage Temperature monitor.

There is no limit to the mixture of sensors you use or how many you use.
Bear in mind the more sensors you use the less specific the alarm is. For instance, if 10 sensors are fitted you do not know which one triggered the alarm.

Range of temperature sensors:
50 - 60 - 70 - 80 Deg C.

You can pick and mix sensors. It can be any manufacturer - provided the relay is normally closed circuited. Any sensor which goes from a closed circuit to an open circuit will alarm the unit.





Item description:	Code
12V Connection box plus 1 x Remote LED 1 x Buzzer, Switch (alarm off).	TSB12
24V Connection box plus 1 x Remote LED 1 x Buzzer, Switch (alarm off).	TSB24
Temp sensor IP68 waterproof **(No temp sensors supplied with unit)**	
50 deg C = 122 deg F Digital temp sensor	TSD50
60 deg C = 140 deg F Digital temp sensor	TSD60
70 deg C = 158 deg F Digital temp sensor	TSD70
80 deg C = 176 deg F Digital temp sensor	TSD80

High Power Distribution and Fuse Box

Up to 500A

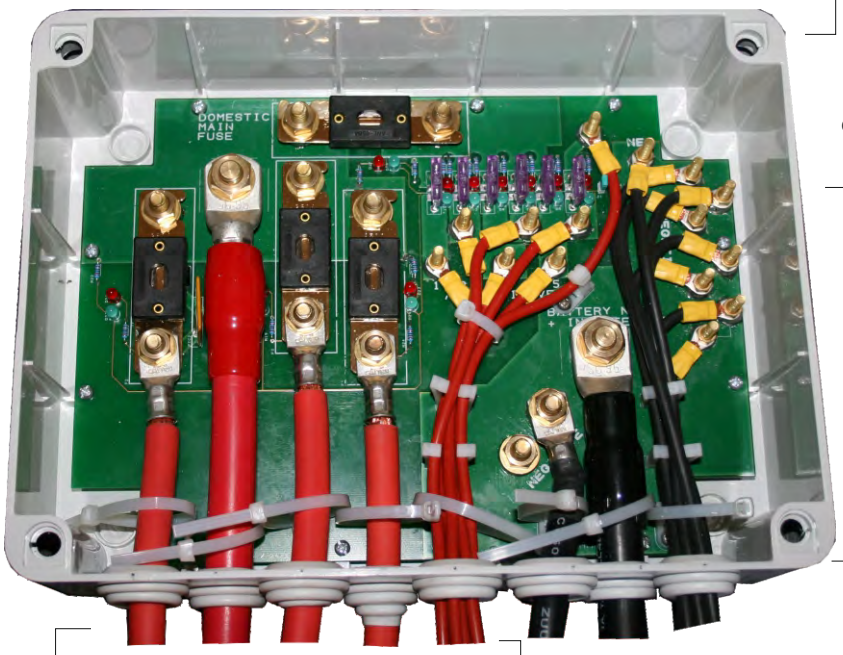
Compact and clear DC distribution system for boats and specialist vehicles.

5 x 15A continuous outputs with 30A fuses with one 300A fuse supplying that section (all supplied).

3 x ANL fused outputs from 80-500A ability.

Extra aux DC feed position to bypass main feed in event of ancillary equipment requiring a permanent feed even if the main battery bank is isolated, such as alarms or bilge pumps.

Red LEDs to show when fuse has blown (only on when fuse has blown).



1 x 15A 'maintained' output with 30A fuse.

Green LEDs to show the circuit is live (LEDs on all the time when battery not isolated, can be switched 'off', if preferred, by removing a link).

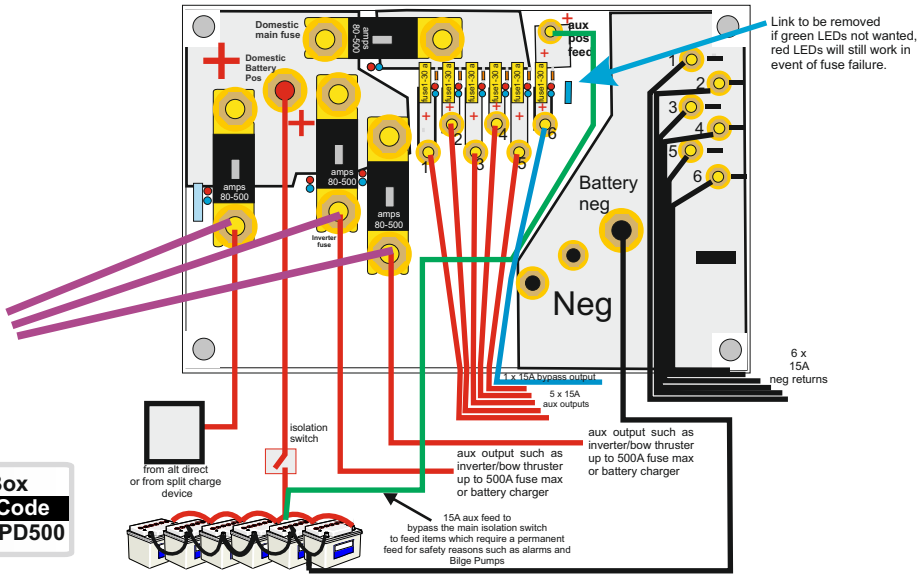
Cable guides for the low power cables, plus cable ties to be tightened when wiring complete to keep wires tidy and secure.

Emergency alternator link in the event of the alternator fuse blowing (this prevents the alternator being damaged).

Most negatives returned to box to enable easy circuit checks.

1) Retail market: can modernise your old system and make it safer and easier to find fuses/cables in case of faulty circuitry. Install near domestic to meet modern safety requirements.

2) OEM market: it shall reduce wiring time and improve cable tidiness. Replaces the need for many individual parts to be fitted and connected. Saving both time and money.



3 GANL fuses are required to complete the Distribution box (indicated by the 3 purple lines). They are not supplied with the package. Please refer to the fuse pages for relevant codes

DC High Powered Fuse Distribution Box		
Size	**Weight**	**Code**
300 x 220 x 120 mm	**1.5Kg**	**PPD500**

DC Cables + Accessories

DC cables - precut | Battery Cable Sets | Link cables

All of our cables are available in almost any length you desire. If the length or cross section of the options are too small or too big, contact us directly and we'll discuss how we can suit your needs. Available pre packed, ideal for retail.

Bespoke Cable Options

DC Cable

- **Colours :** Black or Red
- **Cable Cross Section (mm²) :** 10 , 16 , 25 , 35 , 50 , 70 , 95 , 120
- OR
- **American Wire Gauge :** 8 , 6 , 4 , 2 , 1 , 00 , 000 , 0000
- **Length :** Available to order, but pre-cut at lengths of 0.5m, 1m, 2m and 5m
- **Side A :** Ring terminals (P22), Anderson style connectors (P27), or exposed copper
- **Side B :** Ring terminals (P22), Anderson style connectors (P27), or exposed copper

Photovoltaic Cable

- **Colours :** Black
- **Cable Cross Section (mm²) :** 4 , 6
- **American Wire Gauge :** 12 , 10
- **Length :** Available to order, but pre-cut at lengths of 0.5m, 1m, 2m and 5m
- **Side A + B :** MC-4 connectors as seen on P10-11 (Accessories also available on P11)

Contact us at 01905 771 771 or via the contact form on our website if you wish to discuss a bespoke order being made to your specifications. All connections are crimped with a hydraulic crimping machine to ensure complete, high quality connections within the termination.

Cables w/ Anderson Style Sockets

Cross Sectional Area	Socket Type	Cable Length (m) 0.5	1	2	5
16mm2	50A anderson style	AS16RB05	AS16RB1	AS16RB2	AS16RB5
25mm2	120A anderson style	AS25RB05	AS25RB1	AS25RB2	AS25RB5
35mm2	175A anderson style	AS35RB05	AS35RB1	AS35RB2	AS35RB5
95mm2	350A anderson style	AS95RB05	AS95RB1	AS95RB2	AS95RB5

*

Battery Cable Sets

*

Sterling Part Number

BCS2 Connector Set for 2 Batteries
1x Ring Cable set*, 2x Battery Terminal Sets

BCS3 Connector Set for 3 Batteries
2x Ring Cable Sets*, 3x Battery Terminal Sets

BCS4 Connector Set for 4 Batteries
3x Ring Cable Sets*, 4x Battery Terminal Sets

*Ring Cable Set =*1x Red 50mm2 300mm length cable with 8mm ring terminals and 1x Black equivalent

*Battery Terminal Sets are 2x Lead Wingnuts for the last battery in the set. However, many brass nuts are required to link the remaining terminals.

Battery Link Cables ONLY

*

Sterling Part Number

BLC35 1x 35mm2 300mm length, 8mm ring terminal cable BLACK
1x 35mm2 300mm length, 8mm ring terminal cable RED

BLC50 1x 50mm2 300mm length, 8mm ring terminal cable BLACK
1x 50mm2 300mm length, 8mm ring terminal cable RED

BLC70 1x 70mm2 300mm length, 8mm ring terminal cable BLACK
1x 70mm2 300mm length, 8mm ring terminal cable RED

***pre-packed bag, with description, bar coding. Ideal for retail**

Power Distribution and Terminals

BATTERY TERMINALS sets

Brass Battery Terminals w/ Nut
Sterling Part Number
BT69P Positive Terminal only
BT69N Negative Terminal only
BT69PN (positive and negative)
BT69PN2 (positive and negative) x2
BT69PN3 (positive and negative) x3
BT69PN4 (positive and negative) x4

Lead Battery Terminals w/ Wingnut
Sterling Part Number
BT82P Positive terminal only
BT82N Negative terminal only
BT82PN (positive and negative)
BT82PN2 (positive and negative) x2
BT82PN3 (positive and negative) x3
BT82PN4 (positive and negative) x4

GBT-600PN
8 mm bolt 80g
(pos and neg)

Brass Battery Terminals w/ Wingnut
Sterling Part Number
BT17P Positive terminal only
BT17N Negative terminal only
BT17PN (positive and negative)
BT17PN2 (positive and negative) x2
BT17PN3 (positive and negative) x3
BT17PN4 (positive and negative) x4

Quick Release Battery Terminal
QRBT (positive and negative)

Mini ANL fuse holder battery terminals
- Positive and Negative
Positive - **BTFHP**
Negative - **BTFHN**

GBT-1000PN
10 mm bolt 100g
(pos and neg)

GBT-700PN
10mm CABLE CLAMP 95g

GBT-100PN
8mm bolt with
WING NUT 110g

SOLID BLOCK POWER DISTRIBUTION

GPB-2488
CABLE DIA:
2 x 10mm
8 x 8mm
232g

GPB-102468
CABLE DIA:
1x 12mm
2x 10 mm
6x 8mm
407g
Footprint 105mm x 65mm

GPB-1044
CABLE DIA:
1x 12mm
4x 10mm
431g
Footprint 105mm x 65mm

Jump Start Cables W/ Croc Clips

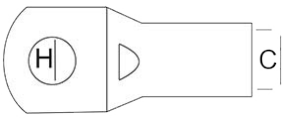
Crocodile Clip Type	Cross Sectional Area	Cable Length (m) 4	6
Red and Black w / Cable	35mm2	JS35RB4	JS35RB6
Red and Black w / Cable	50mm2	JS50RB4	JS50RB6
Red and Black w / Cable	70mm2	JS70RB4	JS70RB6

95mm2, 120mm2, 150mm2 cables
and custom lengths can be arranged, contact us directly.

Battery jump start cast brass clamps
Sterling Part Number
BJSP Jump start clamp, Positive Red
1x Jump start clamp, Positive Red
BJSN Jump start clamp, Negative Black
1x Jump start clamp, Negative Black

Ring Terminals

Crimp Terminals with Sterling Part Number



Cross Sectional Area of Wire / mm² - **C**

Crimp terminal post Diameter/mm - **H**

*	6mm²	10mm²	16mm²	25mm²	50mm²	70mm²	95mm²	120mm²	150mm²
6mm	TC6H6	TC10H6	TC16H6	TC25H6	N/A	N/A	N/A	N/A	N/A
8mm	TC6H8	TC10H8	TC16H8	TC25H8	TC50H8	TC70H8	TC95H8	TC120H8	TC150H8
10mm	TC6H10	TC10H10	TC16H10	TC25H10	TC50H10	TC70H10	TC95H10	TC120H10	TC150H10
12mm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	TC120H12	TC150H12

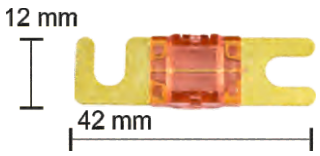
Crimp terminals **ONLY** available in packs of **two, six and twelve**.

For a pack of 2 add **D** to the end of the Sterling Part Number. For a pack of six add **SIX** to the end of the part number. For a pack of twelve add **DOZ** to the end of the Sterling Part Number.
For example, **TC6H6D** = pack of 2. **TC6H6SIX** = pack of 6. **TCH6DOZ** = pack of 12.

Fuses + Fuse Holders

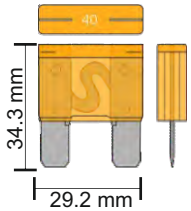
Mini ANL / AFS Fuse Dual Pack

Sterling Part Number 2 x Mini ANL / Fuse
AFS20D 20A MINI ANL Fuses
AFS30D 30A MINI ANL Fuses
AFS40D 40A MINI ANL Fuses
AFS60D 60A MINI ANL Fuses
AFS80D 80A MINI ANL Fuses
AFS100D 100A MINI ANL Fuses
AFS120D 120A MINI ANL Fuses
AFS150D 150A MINI ANL Fuses
AFSMP Multi pack 1x each of above (8x2 fuses)



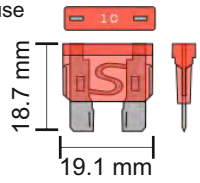
Maxi AMT Fuse Dual Pack

Sterling Part Number 2 x AMT Fuse
AMT20D 20A Maxi AMT Fuses
AMT30D 30A Maxi AMT Fuses
AMT40D 40A Maxi AMT Fuses
AMT50D 50A Maxi AMT Fuses
AMT60D 60A Maxi AMT Fuses
AMT70D 70A Maxi AMT Fuses
AMT80D 80A Maxi AMT Fuses
AMT90D 90A Maxi AMT Fuses
AMTMP Multi pack 1x each of above (8x2 fuses)



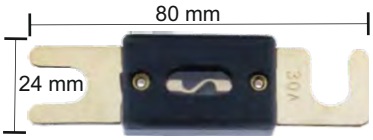
ATC/ATO Fuse Dual Pack

Sterling Part Number 2 x ATC/ATO Fuse
ATC5D 5A ATC / ATO Fuses
ATC10D 10A ATC / ATO Fuses
ATC15D 15A ATC / ATO Fuses
ATC20D 20A ATC /ATO Fuses
ATC30D 30A ATC/ATO Fuses
ATC35D 35A ATC/ATO Fuses
ATC40D 40A ATC/ATO Fuses
ATCMP Multi pack 1x each of above (7x2 fuses)



ANL Fuses Single Pack (gold plated)

Sterling Part Number 1 x ANL Fuse
GANL80 80A ANL Fuse
GANL100 100A ANL Fuse
GANL150 150A ANL Fuse
GANL200 200A ANL Fuse
GANL250 250A ANL Fuse
GANL300 300A ANL Fuse
GANL350 350A ANL Fuse
GANL400 400A ANL Fuse
GANL500 500A ANL Fuse
ANLMP Multi pack 1x each of above (9 fuses)



Super Marine Multi fuse pack: combined all above fuses.
Ideal for having lying in your boat for emergencies.
ANL x9, Mini ANL / AFS x16, AMT x16, ATC / ATO x14
Sterling Part Number
ASUP Super fuse pack 55 fuse pack (collection of multi-packs)

16pcs 16pcs 14pcs 9pcs

Fuse Holders

ATC fuse

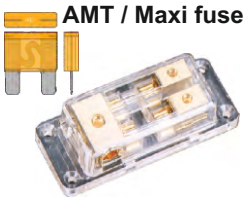
GATC 1428
1 in 2 out
1 X 10 mm
2 X 6 mm FUSED OUT115g

GATC 2828
2 in 2 out
2 X 6 mm IN FUSED OUT
115g

GATC 3448
3 in (solid) 4 out
3 X 10 mm IN (SOLID)
4 X 6 mm FUSED OUT 223g

GATC 4848
4 in 4 out
4 X 6 mm IN AND FUSED OUT
220g

AMT / Maxi fuse



GMFB 1428
1 in 2 out
1 X 10 mm IN 2 X 6 mm OUT
170g

GMFB 2828
2 in 2 out
2 X 6 mm IN | 2 X 6 mm OUT
170g

GMFB 3448
3 in 4 out
3 X 10 mm IN (SOLID)
4 X FUSED 6mm OUT 320g

GMFB 4848
4 in 4 out
4 X 8 mm IN 4 X 8 mm 170g

AUE fuse

GFH-04-1
Single AUE fuse holder 10mm cable with eye
Bolt for battery terminal 50g

GFB 3428
2 X 6 mm IN
2 X 6 mm FUSED OUT 203g

GFB 4848
4 X 6 mm IN
4 X 6 mm FUSED OUT 371g

BUSS BAR LINK INCLUDED
Ring connector

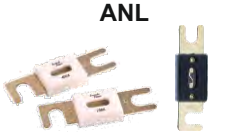
Footprint 148mm x 110 mm
GFBR
4 X holder for

Mini ANL

FHMNS single
FHMN4 pack of 4

AFS4FB
4 way fuse block

ANL



GFH8
8 mm studs

GFH12
12mm studs
2 x 8mm

Resettable Fuses

CB50 50A Fuse
CB100 100A Fuse
CB150 150A Fuse
CB200 200A Fuse
CB250 250A Fuse
CB300 300A Fuse

Multi ATC fuse

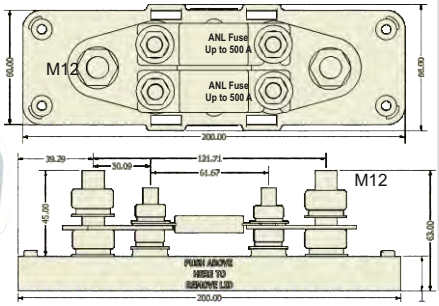
ATC / ATO fuse holder
w/ LED fault lights
with negative bussbar

FH6W 6 Way

FH12W 12 Way

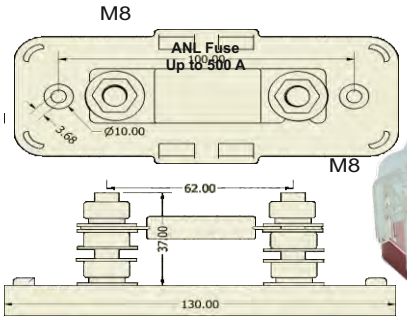
Fits 2 x 500A fuses
up to 1000A total

- Fittings (non ferrous).
- **M12 cable connector.**
- **Up to 1000A of fuses**.
- Twin or single fuse function.
- Single or twin output.
- Ventilated cover protection.
- Isolated rear protection.



- Fittings (non ferrous).
- **M8 cable connector.**
- **Up to 500A fuse** ventilated cover protection.
- Isolated rear protection.

Fits 1 fuse
up to 500A



M8 / M12 Gold ANL Fuse holder (no fuses inc)			
Terminal	**Amps**	**Size L x W x D mm**	**Code**
M8	500A	145 L x 55 W x 53	GFH8
M12	1000A	200 L x 66 W x 69	GFH12

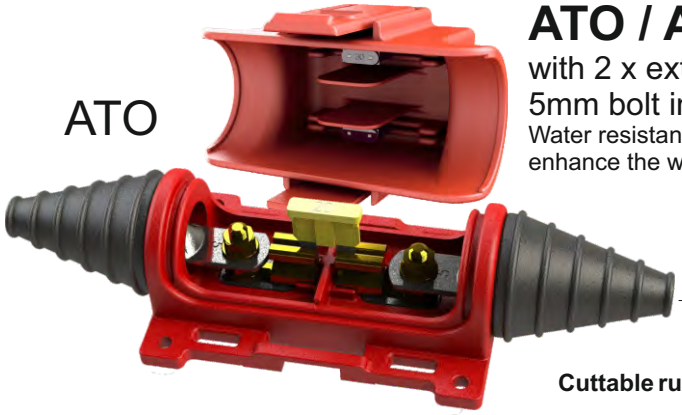
Full range of
Gold plated ANL fuses
See Sterling Gold section

Part Number GANL(x*) (AMPS)
With mica window
***x = 80A , 100A, 150A, 200A, 250A, 300A, 350A, 400A, 450A, 500A**

ATO / ATC / AMT / Maxi fuse holder

with 2 x extra fuse holder in lid 5A - 90A
5mm bolt including 2 rubber boots
Water resistance: lid and rubber boots can be cut and cable tied to enhance the water resistant aspect.

ATO



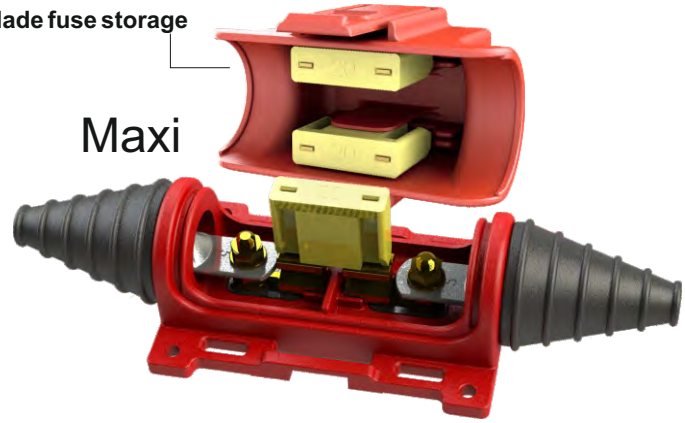
Cuttable rubber boots

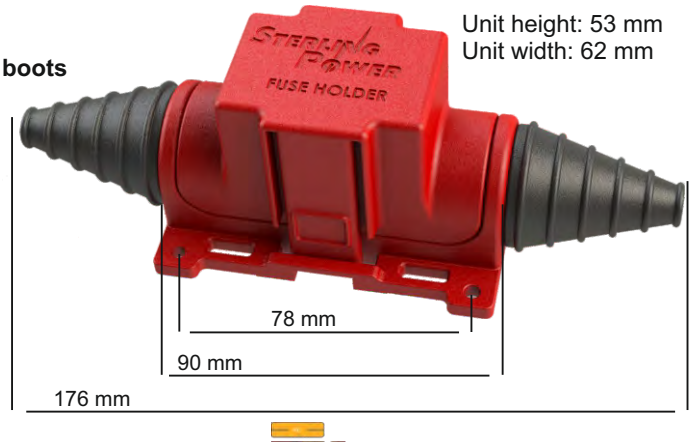
BOTH FUSE TYPES - in one!
ATO/ATC/AMT/Maxi holder: No Fuses included
Sterling part number: BFH1

Unit height: 53 mm
Unit width: 62 mm

Blade fuse storage

Maxi





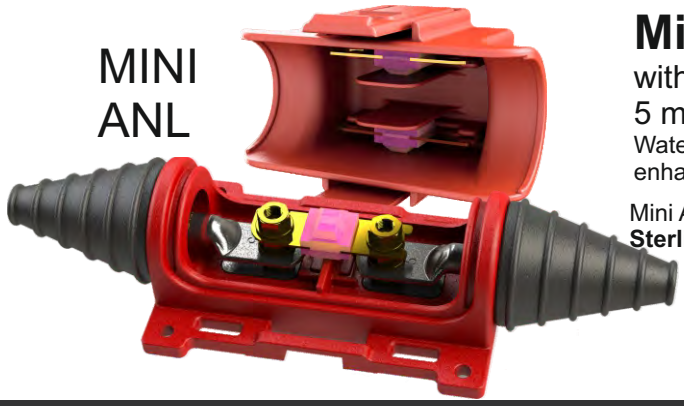
ATO / ATC

AMT / Maxi

Mini ANL / AFS fuse holder

with 2 x extra fuse holder in lid 20-160A
5 mm bolt inc 2x rubber boots
Water resistance: lid and rubber boots can be cut and cable tied to enhance the water resistant aspect.

MINI
ANL

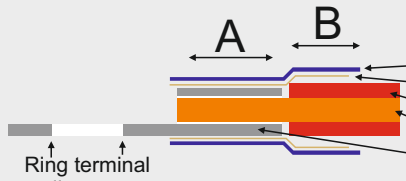


Mini ANL/AFS holder: No fuses included
Sterling Part number : MANL1

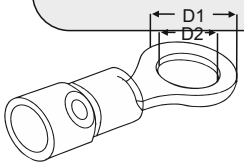
Dimensions for this fuse holder are the same as above.

Mini ANL / AFS

Professional Double crimp



A: Crimp area A for normal copper cable crimp
B: Crimp area B for Cable sheath crimp
Otter plastic terminal cover
Auxiliary copper tube to crimp cable sheath
Wire otter plastic sheath
Copper core wire inside cable
Main crimp material



Cable core size 22-16 AWG // 0.5-1.5 mm2

D1= 5.7 D2 = 3.2 Sterling part numbers 2 x Parts : Z1A 10 x Parts : Z1B 50 x Parts : Z1C	D1= 5.7 D2 = 3.7 Sterling part numbers 2 x Parts : Z1D 10 x Parts : Z1E 50 x Parts : Z1F	D1= 6.6 D2 = 3.7 Sterling part numbers 2 x Parts : Z1G 10 x Parts : Z1H 50 x Parts : Z1I	D1= 8 D2 = 3.7 Sterling part numbers 2 x Parts : Z1J 10 x Parts : Z1K 50 x Parts : Z1L		
D1= 6.6 D2 = 4.3 Sterling part numbers 2 x Parts : Z1M 10 x Parts : Z1N 50 x Parts : Z2A	D1= 8 D2 = 4.3 Sterling part numbers 2 x Parts : Z2B 10 x Parts : Z2C 50 x Parts : Z2D	D1= 8 D2 = 5.3 Sterling part numbers 2 x Parts : Z2E 10 x Parts : Z2F 50 x Parts : Z2G	D1= 9.8 D2 = 5.3 Sterling part numbers 2 x Parts : Z2H 10 x Parts : Z2I 50 x Parts : Z2J	D1= 9.8 D2 = 6.4 Sterling part numbers 2 x Parts : Z2K 10 x Parts : Z2L 50 x Parts : Z2M	D1= 11.6 D2 = 8.4 Sterling part numbers 2 x Parts : Z2N 10 x Parts : Z3A 50 x Parts : Z3B
D1= 13.6 D2 = 10.5 Sterling part numbers 2 x Parts : Z3C 10 x Parts : Z3D 50 x Parts : Z3E	D1= 19.2 D2 = 13 Sterling part numbers 2 x Parts : Z3F 10 x Parts : Z3G 50 x Parts : Z3H	MULTIPACK 6 of each red ring terminal above Part Number : Z14A			

D1= 6.6 D2 = 3.2 Sterling part numbers 2 x Parts : Z3I 10 x Parts : Z3J 50 x Parts : Z3K	D1= 6.6 D2 = 3.7 Sterling part numbers 2 x Parts : Z3L 10 x Parts : Z3M 50 x Parts : Z3N	

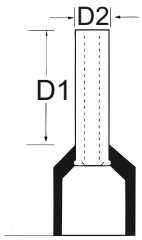
Cable core size 16-14 AWG // 1.5-2.5 mm2

D1= 6.6 D2 = 3.7 Sterling part numbers 2 x Parts : Z4A 10 x Parts : Z4B 50 x Parts : Z4C	D1= 8.5 D2 = 3.7 Sterling part numbers 2 x Parts : Z4D 10 x Parts : Z4E 50 x Parts : Z4F	D1= 6.6 D2 = 4.3 Sterling part numbers 2 x Parts : Z4G 10 x Parts : Z4H 50 x Parts : Z4I	D1= 8.5 D2 = 4.3 Sterling part numbers 2 x Parts : Z4J 10 x Parts : Z4K 50 x Parts : Z4L	D1= 8.5 D2 = 5.3 Sterling part numbers 2 x Parts : Z4M 10 x Parts : Z4N 50 x Parts : Z5A	D1= 9.5 D2 = 5.3 Sterling part numbers 2 x Parts : Z5B 10 x Parts : Z5C 50 x Parts : Z5D
D1= 12 D2 = 6.4 Sterling part numbers 2 x Parts : Z5E 10 x Parts : Z5F 50 x Parts : Z5G	D1= 12 D2 = 8.4 Sterling part numbers 2 x Parts : Z5H 10 x Parts : Z5I 50 x Parts : Z5J	D1= 13.6 D2 = 10.5 Sterling part numbers 2 x Parts : Z5K 10 x Parts : Z5L 50 x Parts : Z5M	D1= 19.2 D2 = 13 Sterling part numbers 2 x Parts : Z5N 10 x Parts : Z6A 50 x Parts : Z6B	MULTIPACK 6 of each blue ring terminal above Part Number : Z14B	

D1= 7.2 D2 = 3.7 Sterling part numbers 2 x Parts : Z6C 10 x Parts : Z6D 50 x Parts : Z6E	D1= 7.2 D2 = 4.3 Sterling part numbers 2 x Parts : Z6F 10 x Parts : Z6G 50 x Parts : Z6H	D1= 9.5 D2 = 4.3 Sterling part numbers 2 x Parts : Z6I 10 x Parts : Z6J 50 x Parts : Z6K	D1= 9.5 D2 = 5.3 Sterling part numbers 2 x Parts : Z6L 10 x Parts : Z6M 50 x Parts : Z6N	D1= 12 D2 = 6.4 Sterling part numbers 2 x Parts : Z7A 10 x Parts : Z7B 50 x Parts : Z7C	D1= 15 D2 = 8.4 Sterling part numbers 2 x Parts : Z7D 10 x Parts : Z7E 50 x Parts : Z7F

Cable core size 12-10 AWG // 1.5-2.5 mm2

D1= 15 D2 = 10.5 Sterling part numbers 2 x Parts : Z7G 10 x Parts : Z7H 50 x Parts : Z7I	D1= 19.2 D2 = 13 Sterling part numbers 2 x Parts : Z7J 10 x Parts : Z7K 50 x Parts : Z7L	MULTIPACK 6 of each Yellow ring terminal above Part Number : Z14C			



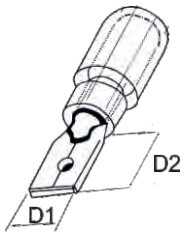
2 AWG / 35 mm2 IN
D1= 22 D2= 8.7
Sterling part numbers
2 x Parts : Z7M
10 x Parts : Z7N
50 x Parts : Z8A

4 AWG / 25 mm2 IN
D1= 18 D2= 7.9
Sterling part numbers
2 x Parts : Z8B
10 x Parts : Z8C
50 x Parts : Z8D

6 AWG / 16 mm2 IN
D1= 18 D2= 6.2
Sterling part numbers
2 x Parts : Z8E
10 x Parts : Z8F
50 x Parts : Z8G

8 AWG / 10 mm2 IN
D1= 18 D2= 4.9
Sterling part numbers
2 x Parts : Z8H
10 x Parts : Z8I
50 x Parts : Z8J

MULTIPACK
6 of each ferrule
Ferrule Pack
Part Number :
Z14D

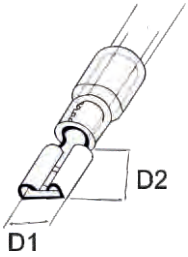


0.5-1.5 mm2 IN
D1= 6.35 D2=11
Sterling part numbers
2 x Parts : Z8K
10 x Parts : Z8L
50 x Parts : Z8M

1.5-2.5 mm2 IN
D1= 6.35 D2=10
Sterling part numbers
2 x Parts : Z8N
10 x Parts : Z9A
50 x Parts : Z9B

4-6 mm2 IN
D1= 6.35 D2=12
Sterling part numbers
2 x Parts : Z9C
10 x Parts : Z9D
50 x Parts : Z9E

MULTIPACK
6 of each blade terminal (M) Pack
Part Number :
Z14E



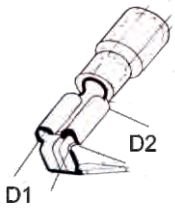
0.5-1.5 mm2 IN
D1= 7.4 D2=11
Sterling part numbers
2 x Parts : Z9F
10 x Parts : Z9G
50 x Parts : Z9H

1.5-2.5 mm2 IN
D1= 7.4 D2=11
Sterling part numbers
2 x Parts : Z9I
10 x Parts : Z9J
50 x Parts : Z9K

4-6 mm2 IN
D1= 7.4 D2=12
Sterling part numbers
2 x Parts : Z9L
10 x Parts : Z9M
50 x Parts : Z9N

MULTIPACK

6 of each blade terminal (F) Pack
Part Number :
Z14F



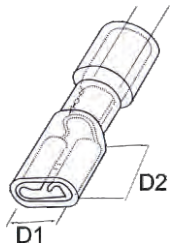
0.5-1.5 mm2 IN
D1= 7.4 D2=11.5
Sterling part numbers
2 x Parts : Z10A
10 x Parts : Z10B
50 x Parts : Z10C

1.5-2.5 mm2 IN
D1= 7.4 D2=11.5
Sterling part numbers
2 x Parts : Z10D
10 x Parts : Z10E
50 x Parts : Z10F

4-6 mm2 IN
D1= 7.4 D2=12
Sterling part numbers
2 x Parts : Z10G
10 x Parts : Z10H
50 x Parts : Z10I

MULTIPACK

6 of each piggyback terminal (F) Pack
Part Number :
Z14G



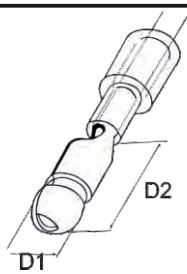
0.5-1.5 mm2 IN
D1= 7.4 D2=11
Sterling part numbers
2 x Parts : Z10J
10 x Parts : Z10K
50 x Parts : Z10L

1.5-2.5 mm2 IN
D1= 7.4 D2=11
Sterling part numbers
2 x Parts : Z10M
10 x Parts : Z10N
50 x Parts : Z11A

4-6 mm2 IN
D1= 7.4 D2=12
Sterling part numbers
2 x Parts : Z11B
10 x Parts : Z11C
50 x Parts : Z11D

MULTIPACK

6 of each insulated blade term (F) Pack
Part Number :
Z14H



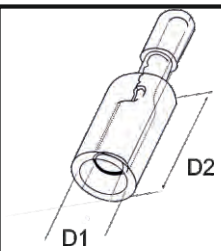
0.5-1.5 mm2 IN
D1= 4 D2= 11
Sterling part numbers
2 x Parts : Z11E
10 x Parts : Z11F
50 x Parts : Z11G

1.5-2.5 mm2 IN
D1= 5 D2= 11
Sterling part numbers
2 x Parts : Z11H
10 x Parts : Z11I
50 x Parts : Z11J

4-6 mm2 IN
D1= 5 D2= 12
Sterling part numbers
2 x Parts : Z11K
10 x Parts : Z11L
50 x Parts : Z11M

MULTIPACK

6 of each bullet terminal (M) Pack
Part Number :
Z14I



0.5-1.5 mm2 IN
D1= 4 D2=13
Sterling part numbers
2 x Parts : Z11N
10 x Parts : Z12A
50 x Parts : Z12B

1.5-2.5 mm2 IN
D1= 5 D2=14
Sterling part numbers
2 x Parts : Z12C
10 x Parts : Z12D
50 x Parts : Z12E

4-6 mm2 IN
D1= 5 D2=14
Sterling part numbers
2 x Parts : Z12F
10 x Parts : Z12G
50 x Parts : Z12H

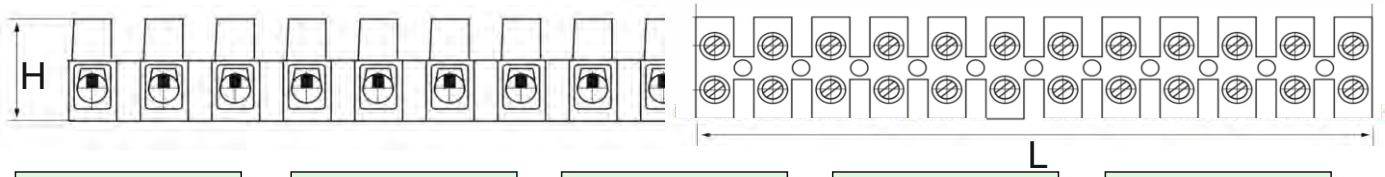
MULTIPACK

6 of each bullet terminal (F) Pack
Part Number :
Z14J

Polymer Cable Gland

L1 : 8mm L2 : 8mm
Cable - 2.5-4.5mm2
Sterling part numbers
2 x Parts : 2M12
10 x Parts : 10M12
50 x Parts : 50M12

Chock Block Connector Strip - Strip of 12 - Up to 400V



L: 93mm H: 12mm
Cable: 4mm limit
Current Limit : 3A
1 x Strip : 1H3A
2 x Strip : 2H3A
5 x Strip : 5H3A

L: 126mm H: 15.5mm
Cable: 10mm limit
Current Limit : 10A
1 x Strip : 1H10A
2 x Strip : 2H10A
5 x Strip : 5H10A

L: 155mm H: 19.5mm
Cable: 14mm limit
Current Limit : 20A
1 x Strip : 1H20A
2 x Strip : 2H20A
5 x Strip : 5H20A

L : 192mm H : 26mm
Cable: 25mm limit
Current Limit : 60A
1 x Strip : 1H60A
2 x Strip : 2H60A
5 x Strip : 5H60A

L : 250mm H : 31mm
Cable: 40mm limit
Current Limit : 100A
1 x Strip : 1H100A
2 x Strip : 2H100A
5 x Strip : 5H100A

Ferrule Use ONLY

Square Pressure Crimp Tool
Suitable ONLY FOR
Ferrule crimping
Cable AWG: 24-10
Cable mm2: 0.25-6.0
Sterling Code
MG-8-6-4

Crimp Tool
Suitable for general
crimping use
Cable AWG: 22-10
Cable mm2: 0.5-6.0
Sterling Code
MG-8-6-4

Anderson Style Cable Connectors

Single Input Anderson Style Connectors

Ideal for joining two lengths of cable reliably, sturdily and safely - or for sorting and arranging your cable connections with clear, easy to understand colours.

SIZE	45A - AWG 12-16			75A AWG 6			120A AWG 2			180A AWG 1/0		
QUANTITY	2	6	12	2	6	12	2	6	12	2	6	12
BLACK	Z14A	Z14B	Z14C	Z16G	Z16H	Z16I	Z18A	Z18B	Z18C	Z19G	Z19H	Z19I
RED	Z14D	Z14E	Z14F	Z16J	Z16K	Z16L	Z18D	Z18E	Z18F	Z19J	Z19K	Z19L
BROWN	Z14G	Z14H	Z14I	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
YELLOW	Z14J	Z14K	Z14L	Z17A	Z17B	Z17C	Z18G	Z18H	Z18I	Z20A	Z20B	Z20C
GREEN	Z15A	Z15B	Z15C	Z17D	Z17E	Z17F	Z18J	Z18K	Z18L	Z20D	Z20E	Z20F
BLUE	Z15D	Z15E	Z15F	Z17G	Z17H	Z17I	Z19A	Z19B	Z19C	Z20G	Z20H	Z20I
GREY	Z15G	Z15H	Z15I	Z17J	Z17K	Z17L	Z19D	Z19E	Z19F	N/A	N/A	N/A
WHITE	Z15J	Z15K	Z15L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Dual Input Anderson Style Connectors

Anderson style socket	Part number	Current rating (A)	Size
Pre packed * 2 per pack	AS50D	50	35mm x 15mm x 47mm
	AS120D	120	44mm x 20mm x 63mm
	AS175D	175	53mm x 25mm x 79mm
	AS350D	350	70mm x 31mm x 108mm

Triple Input Anderson Style Connectors

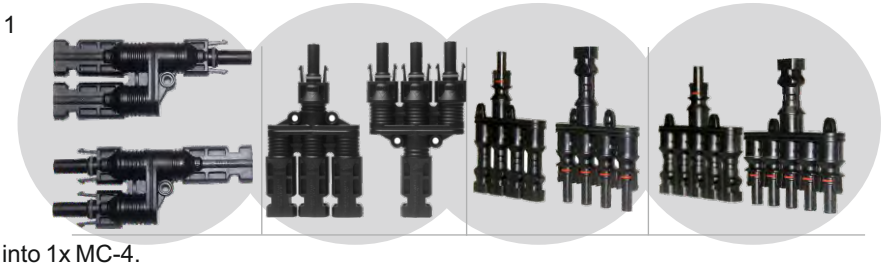
Current rating (A)	Quantity	Part number	Cable Intake
50	1	Z20J	6 AWG
50	2	Z20K	6 AWG
175	1	Z20L	1/0 AWG
175	2	Z21A	1/0 AWG

Anderson Style Connector Accessories

		Anderson Type			
		50A	120A	175A	350A
	Handle	Z21B	Z21I	Z22A	Z22E
	Rubber Dust Cover (RED)	Z21C	Z21J	Z22B	Z21K
	Rubber Dust Cover (BLK)	Z21D	N/A	N/A	Z21L
	Cable Plug Cover (RED)	Z21E	N/A	Z22C	Z22F
	Cable Plug Cover (BLK)	Z21F	N/A	Z22D	Z22G
	Cable Sleeve Cover (RED)	Z21G	N/A	N/A	N/A
	Cable Sleeve Cover (BLK)	Z21H	N/A	N/A	N/A

Solar Accessories

* MC-4 T-Style Group Con 2/3/4/5: 1
  1 x Male MC4 connector
  1 x Female MC4 connector
  Sterling Part Number
  S2GD 2-1 Dual pack
  S3GD 3-1 Dual pack
  S4GD 4-1 Dual pack
  S5GD 5-1 Dual pack



Used to connect 2/3/4/5 x MC-4 cables into 1x MC-4.
Warning make sure that the total input cell current does not exceed 30A.

* **Pre-packed bag, with description and bar coding suitable for retail sales**

* MC-4 Y-Style Branch Con 2/3/4/5: 1
  1 x Male MC4 connector
  1 x Female MC4 connector
  Sterling Part Number
  S2BD 2-1 Dual pack
  S3BD 3-1 Dual pack
  S4BD 4-1 Dual pack

Used to connect 2/3/4/5 x MC-4 cables into 1x MC-4. Warning make sure that the total input cell current does not exceed 30A.

* MC-4 Connector With Fuse
  Sterling Part Number
  SF10 Male MC4 10A
  SF20 Male MC4 20A
  1 x Male MC4

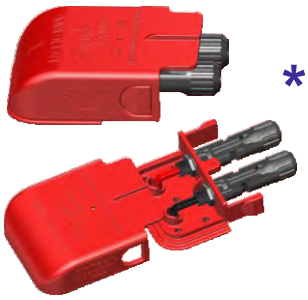
* MC-4 Through bulkhead
  Dual pack
  Sterling Part Number
  STB
  1 x Male MC4 through bulkhead
  1 x Female Mc4 through bulkhead

* MC-4 Diode Male to Female
  Sterling Part Number
  SD10 MtF MC4 Diode 10A
  SD20 MtF MC4 Diode 20A
  1 x Male to Female MC-4 diode

* 8x Self adhesive cable tie holder for roof or wall cable installations.
  Sterling Part Number:
  SAT

* MC-4 M & F Through roof waterproof pod 12 mm holes
  Sterling Part Number
  SP
  Pod+gasket only
  suitable for MC-4 or conventional gland use

Connectors not included



* MC-4 6mm2 Solar Regulator Connector M/F 15cm
  Sterling Part Number
  SRC6
  1x MC-4 6mm2 Solar Regulator Connector M/F 15cm

MC-4 connector specifications

Rated current: 30A	Pin Dia 4.0mm dia
Rated Voltage: 1000VDC	Flame class: UL94-VO
Suitable cable: 2.5 & 4 & 6mm2	Safety class:11
Waterproof IP67	Insulation material: PPO
Contact resistance 0.2mm Ohms	Connecting system: Crimping
Contact material: Copper Tin plated	Temperature rating -40 to 90 deg C

PV and MC4 crimping tools

Extended ergonomic grip **ensures comfort and high transmission of force**, to minimise fatigue and stress.

Consistently high crimping quality and accuracy is ensured thanks to the supplied crimping moulds and complete locking.

The stripping, cutting and crimping tools **all come neatly packaged in a zip-locked handy pack**. With an additional pair of screwdrivers.

Suitable for MC3, MC4 and Tyco solar connectors, or the 26-10 American Wire Gauge standard(AWG).

Tools have a crimp capacity range of 2.5-6mm and feature hardened carbon steel to ensure reliability and service for long periods in even the toughest conditions.

Sterling Part Number: SKIT

Specifications

Construct Material: Carbon Steel
Type: Combination Pliers
Model Number: A-2546B
Application: MC3/MC4/Tyco Solar Connectors
Purpose: Crimping/Cutting/Stripping MC3/MC4 wires of 2.5mm, 4mm,6mm (AWG 14/12/10)
Cutting Range: 30mm MAX
Stripping Range: 0.9-6.0mm
Weight: 2.2kg
Crimping Range MC3/MC4: 2.5/4/6mm2 (AWG 14/12/10)
Crimping Range Tyco: 4/6mm2 (AWG 12/10)
Pack Size: 15*32*5CM
Manual: English

What comes with the tool set.

1. A-2546B PV MC4 Crimping Tool for crimping MC4 connectors.
   Crimping range: 2.5, 4, 6.0mm2, length:230mm.
2. LS-700E cable stripper for stripping cables 1.5mm2, 2.5mm2, 4mm2, 6mm2
3. LS-206 cable cutter for cutting cables 35mm2 max.
4. LSD-2546S MC4 Spanner 1 set
5. Straight screwdriver 1 piece and Cross screwdriver 1 piece
6. MC4 locator
7. 1 allen key
8. Zippered Carrying Bag

Sterling Part Number: SKIT

MC-4 Pre-made extension cables

From 0.5-10m in length. 4mm2 and 6mm2 tinned coated cable.
Pre-fitted with TUV approved M & F MC-4. Pre-bagged with bar codes, ideal for shops

TUV/UL APPROVED

	4mm2	6mm2
0.5mtr	SE05M4	SE05M6
1mtr	SE1M4	SE1M6
2mtr	SE2M4	SE2M6
3mtr	SE3M4	SE3M6
4mtr	SE4M4	SE4M6
5mtr	SE5M4	SE5M6
6mtr	SE6M4	SE6M6
7mtr	SE7M4	SE7M6
8mtr	SE8M4	SE8M6
9mtr	SE9M4	SE9M6
10mtr	SE10M4	SE10M6

All cables ordered from us, are made by us. Meaning we can organise, to order, any needed length of either 4mm or 6mm cable, with either exposed wire or with readily attached MC-4 connectors.

For more information, or a bespoke order, contact us directly.

Our cables are **Double Insulated** with XLPE jacketing, ensuring safety and efficiency.

* **Pre-packed bag, with description and bar coding suitable for retail sales**

*

Our **tin coated copper wires** mean that all our UV cables are naturally **corrosion resistant.**

Why choose the Alternator to Battery Charger over an Advanced Alternator Regulator?

Ease of installation, is the simple answer. They both end up doing the same thing but by very different technologies. The advanced regulator is a lot cheaper but can be hard to fit. The alternator to battery charger is a lot more expensive, easier to fit and has a few extra features like an internal splitting system.

Why Choose a Battery to Battery Charger over an Alternator to Battery Charger and an Advanced Alternator Regulator ?

The Battery to Battery Charger is a trouble free installation. Both the Advanced Regulator and the Alternator to Battery charger would cause problems with vehicles with complex ECUs. This is all European vehicles. Most American vehicles may still be okay (this will change over the years). The Battery to Battery Charger connects to the engine starter battery and has 100% nothing to do with the primary system (other than taking its power). All complex aspects off the primary system are left in tact. This ensures no problems will be reflected in the standard engine management system.

Which Battery to Battery Charger to use?

Features	1 New Batt to Batt	2 Waterproof 60A-120A	3 IP68 waterproof	4 Original	5 Original with RBF	6 Solar B to B
Waterproof		●	●			
Including cables and fuses			●			
Current limiting	●	●	●	●	●	●
High V reduction and low V Boost	●	●	●	●	●	●
Battery type adjustable 6 types			●			
Battery type adjustable 8 types		●				
Battery type adjustable 9 types	●					
Battery type adjustable 4 types				●	●	●
Custom set	●	●	●	●	●	●
Lithium battery type	●	●	●			
Fan cooled	●	●		●	●	●
RBF friendly	●	●	●		●	●
Adjustable current limit	new 120-240 model					

Why Choose an Alternator to Battery Charger over an Alternator Regulator?

Alternator to regulators have the following disadvantages to the Alternator to battery chargers:

Relatively difficult to install: This limits semi skilled personnel for fitting.

Requires the removal of the existing alternator to work on it: This can be awkward and time consuming.

Requires extra cables to be run on the boat or vehicle: This can be again be time consuming and awkward.

Warranty on new engines: Some engine / vehicle dealers raise warranty issues if a new alternator is modified to fit an advanced regulator.

ECU Problems: Many new engines have ECU's (electronic control units) on their engine management systems, any attempt to fit an advanced regulator will result in alarms going off (mainly in vehicles, motor homes and the latest marine engines). The Alternator to Battery Charger ensure the main vehicle / boat voltage remains within the ECU's programmed parameters and allows the extra battery bank to be charged at the higher voltages needed to achieve fast charging.

Total Package: 95% of installations using an advanced alternator regulator also have some sort of split charger system whereas the alternator to battery charger already has that built in.

What is Current Limiting?

Current limiting is the ability of the product to internally limit the current which it will allow to pass through itself. This prevents damage to the unit in the event off heavy current draw (larger than the rating of the product) such as engine starting and large bow thrusters/inverters. This also allows multiple units to be used on the same battery banks with no overloading of one unit. Any size charger / alternator can be used with a current limited device and this device shall limit the current to the rating of the device.

Can I use my solar panels in conjunction with Sterling's charging products?

Yes, they will work, they have nothing to do with each other but the solar systems will not affect nor interfere with any Sterling Power system.

Need a larger charger than Sterling can provide?

The Sterling Pro Charge Ultra range is digitally controlled and current limiting. This allows numerous units to be put together in parallel (to increase current rating) or to be put in series (to increase voltage rating). A typical example would be someone wanting 120A charger at 12V. Simply add 2 PCU1260 in parallel. Likewise, you could add 2 PCU2430 together in series to get 30A at 48V.

How to rate the size of a charger:

This very much depends on circumstance:

1) From standard shore power, the rule of thumb is to charge at about 10% of the Ah capacity of your battery bank(s). This is ideal if leaving to charge overnight or time is not a big factor. An empty battery (about 80% empty) would fully charge in about 8-10 hours.
2) If charging from a generator, to save on generator hours / fuel, it is recommended to rate the charger to 25%+. The larger the charger the faster the charge rate and the less hours on the generator's set. This is a purely financial driven decision based your requirements.
3) A user may wish to really thump current in to their batteries in order to get them charged quickly between short stops. They may be using AGMs and are willing to replace them regularly (as they shall not live long). In this case rate the charger at around 50%+ of Ah capacity. For batteries like lithium it could be as high as 1C which is charging at the total rate of the battery's Ah in one hour. You could actually use 400A of battery charging on a 400Ah lithium battery bank and charge in 1 hour.

Note. Rate to continuous onboard use. E.g. Using 50A, only charging at 20A, equals a 30A deficit. In this case, use at least a 50A charger.

How to Calculate Fuse Ratings.

In order to work out the size of fuse needed, follow this formula for working out the fuse rating, voltage or wattage for each appliance:

P (power Watts) = V (Voltage) x I (Amps)

The current the product will pull can be calculated by dividing the power used by the appliance by the voltage going into the appliance:

I (Amps) = P (Watts) ÷ V (voltage) for a fuse you like to work from 50-200% above this amp rating depending on the product. For example, if you using a 2500W inverter which is about 200A load, the inverter may have a large short term overload of say 4000W, so the fuse would be able to deal with that surge. The same would be true for a bow thrusters, anchor winches, air conditioners where there is a sizable overload ability - rate to double the continuous load. However, for fixed loads with no overload (e.g. lights) then 30-50% above is fine. Remember, the fuse is to protect the cables not the product, also, note that any wire directly connected to a battery should be fused.

DC voltage measured	DC 12V (fuse size)	DC 24V (fuse size)
Fridge (40W)	6A	3A
Hairdryer (1400W)	200A	100A
Kettle (1600W)	200A	100A
Laptop PC (350W)	50A	25A
Microwave (1400W back plate)	200A	100A
Television (300W)	50A	25A
Washing Machine (2200W)	300A	150A

Lithium Questions

What is C rating?

C essentially means the battery's charge rate to Ah capacity. 0.5C for a 100Ah battery means you can charge the battery at 50A. The number before the C denotes the fraction of the Ah capacity to charge at. E.g. 0.5 x 100Ah = 50A. Look out for terms such as continuous rating and maximum rating. You are only interested in the continuous rating figure. This is what you should rate your battery charger to.

Life expectancy

An average AGM battery claims 1000 cycles. In real world use, due to over charging and deep discharging this figure dramatically diminishes. Lithium batteries are not as affected by depth of charge and discharge. 20x longer life.

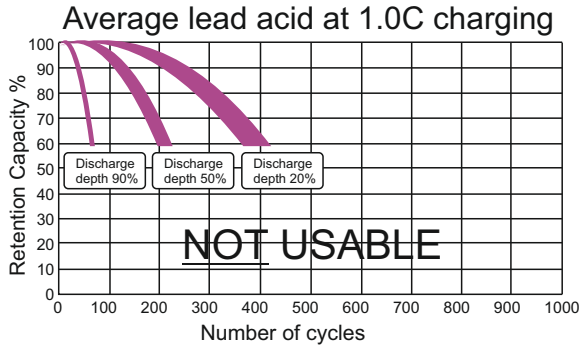
Chassis weight

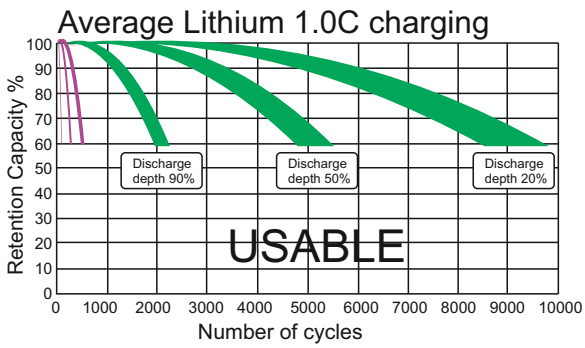
Lithium batteries are generally half the weight of their lead acid equivalents. You also get twice the available (real world) Ah capacity. This makes lithium batteries 4x more effective at delivering the same power to weight ratio. This is extremely important if chassis weight is of importance.

Lithium, a straight swap from Lead Acid?

NO! Lithium batteries MUST be charged with correct voltage profile and current rate. To regulate for correct voltage and current we would recommend looking at our Battery to Battery chargers.

Comparison





Helpful YouTube videos from Sterling YouTube

We have many videos and guides available on our YouTube page. Simply visit www.youtube.com/user/sterlingpowerltd

Voltage drop specification

Safety regulations demands any cable directly connected to a battery source must be fused

Required Current based at approx 60 deg C 12V

Warning: this is total cable length not distance to product remember to add the pos and neg cable length as total

This chart for general reference only, cables sizes vary with ambient temperatures and other aspects

Use only multi strand cable not solid core cable.

Cable length meters

Higher voltage drop Lights, pumps Non Critical equipment	Low voltage drop inverters chargers Critical equipment	5A	10A	15A	20A	25A	30A	40A	50A	60A	70A	80A	90A	100A	120A	150A	200A	300A	400A
0-6	0-2																		
6-9	2-3																		
9-15	3- 4.5																		
15- 19	4.5- 6																		
19-24	6-7.5																		
24-30	7.5-9																		
30-40	9-12																		
40-51	12-15																		
51-61	15-18																		
	18-21																		
	21-24																		
	24-27																		
	27-30																		
	30-33																		
	33-37																		
	37-40																		

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AWG American Wire Gauge	Copper diameter mm	Copper Cross sectional mm sq
16	1.29	1.5
14	1.63	2.5
12	2.05	4.0
10	2.59	6.0
8	3.26	10.0
6	4.11	16.0
4	5.19	25.0
2	6.54	35.0
1	7.35	50.00
0	8.25	60.00
00	9.27	70.00
000	10.40	95.00
0000	11.68	120.00

For unknown cable simply measure ***copper conduit*** diameter and equate to the above chart.
do not measure the cable insulation diameter. The mm sq figure is rounded up for Euro cables.

For HD photographs of Sterling's products, refer to:
https://www.flickr.com/photos/128075788@N06/sets/
The relevant links can also be found on our website.

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