

Multi battery charging chemistry module

IP68

Convert a multiple output, single chemistry battery charger into a:
Multi Chemistry / Multi Voltage / Multi temperature sensing / Multi output / Multi remote sense Battery Charger

Battery Charger Chemistry Modification Module

Another great new idea from Sterling, Patent Pending: GB1204145.5

The problem

Most boats or specialised vehicles have multi-battery bank installations. This type of installation can cause problems if the battery chemistries in the installation are very different from each other (i.e. gel and open lead acid etc.) or even one battery bank may have different voltage requirements (i.e. you may have a 12V charger and require 24V for 1 battery bank (or vice versa). A good example of this is a GEL battery bank for your starter battery bank and an Open Lead Acid battery bank for a secondary / aux battery system and a 24V lead acid sealed for the bow thruster. This causes a problem for most multiple standard output battery chargers as they can only be set to 1 battery chemistry type and 1 voltage. The usual thing is to set the charger to the lower voltage chemistry which in turn reduces the potential performance of the charge on the other battery banks with different chemistry plus damaging the battery bank. For example, you could have a GEL battery requiring 14.1V and 13.5V float but also an open lead acid bank requiring 14.8V charger and 13.5V float. Obviously, the 2 charge cycles cannot be achieved at the GEL setting, the open lead acid battery bank will not charge at a high enough voltage and would end up sulphating the battery bank, this would result in premature destruction of the bank and a warranty failure on that bank as it was not charged at it's recommended charging curve. If the 14.8V range was used to keep the open lead acid batteries happy then the premature destruction of the AGM battery bank would be assured as they would dry up. The warranty for these batteries would then be forfeited for the same reason as explained before. There are 2 ways to do this.

1) Switch each output on for a period of time and convert that output to a different chemistry setting and scan through the outputs. This method is simple but, in effect, is a poor solution because for example, if you may have 60A charger then you can only switch on 1 output during a time frame this supplies reduces power to full batteries but starves the empty batteries of the time they need to harvest the full charger power potential during that time span. The result is, for example, a large domestic battery bank and an engine start and bow thruster bank would result in the 60A only effectively being a 20A to the main domestic battery bank in that scanning time frame.
2) 3 individually adjustable outputs, this is, by far, the best and only totally effective way of achieving this, however, in effect, you have to add an expensive output stage controller to each output resulting in a massive price rise (over 2-3 times the cost of the standard unit). Its very unlikely that an OEM boat / vehicle builder would fit this type of product as standard due to

the high initial purchase cost of such a unit.

The solution

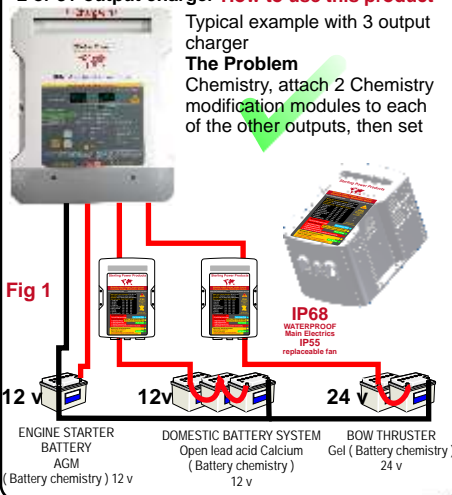
The new Sterling module approaches this from the same angle as adding an output stage to each output. We effectively place in a box a voltage booster and the output stage from a digital charger this means that the new device can be added to any of the output terminals of our Pro Charge Ultra (or most other competitor companies multiple output charger). This will allow the mains charger to be set at the lower chemistry voltage for the likes of Gel, then, by adding the new Sterling Multi chemistry module to one of the outputs (must be connected to an output of a current limiting charger and cannot be connected direct to a battery (see fig 1 and fig 2)). This device will take the lower voltage power from the charger and increase its voltage to match the required charge curves of the other battery bank chemistries. The output voltage and charging curves are independent of the charger input voltage this enables a totally different chemistry to be selected, this gives all the advantages of the multi chemistry charger without the huge extra cost, and can be simply retro fitted to any multi output charging system (within the limitations of the product).

Advantages of this product

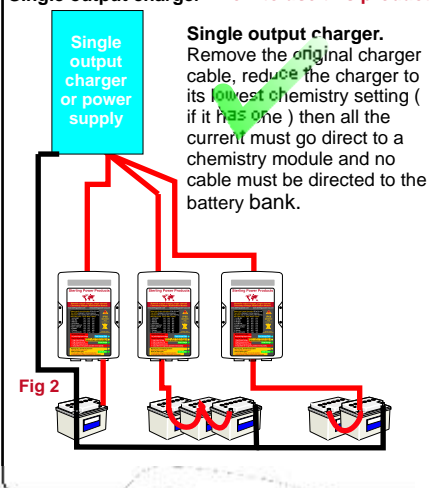
- 1) Easy to install,
- 2) Fits our products and most of our competitors multiple output chargers or convert a single output charger into a mutable output charger
- 3) 12-12, 12-24, 24-24, and 12-24 models.
- 4) 8 selectable independent latest battery chemistries to choose from and a de-sulphation cycle, also LifePo4 cycle.
- 5) Battery temperature compensation and high battery temp trip.
- 6) Remote battery sense compensate for cable voltage drop
- 7) 6 LEDS projecting over 20 individual charge and warning information events
- 8) Fail safe, reverts to basic charge function - about 1 volt less in event of a failure, product can be replace/repair at convenience
- 9) high battery temp string trip (optional), so every battery can be monitored and unit switch off in event of battery temp problem
- 10) Ignition feed generator to link in with sterling Pro Split R alternator splitter, this allows the output to be further split
- 11) Remote control available as optional extra

Which model suits my needs. Ensure that your current chargers output is equal to or less than the rating of the product, ie a 12 V 60 amp module

2 or 3+ output charger How to use this product



Single output charger How to use this product



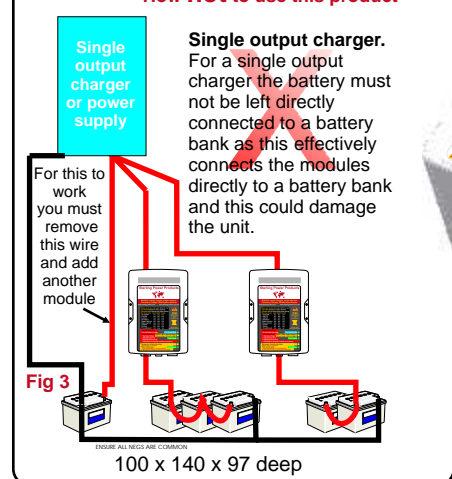
can be used on any charger up to 12 v 60 amps.

Will this product work on my multi output charger ?

This unit requires there to be a Live feed on the output terminal on the charger you wish to connect it to when the charger is switched on. **To Test.** with the port in question connection point free of any cable and all other cables connected as per normal, simply check there is a voltage of 13 + V (or 26 + V) on that output, if no voltage on that output when charger on then the product will not work.

Note: This is a new product and new concept, we have undergone all the tests etc we can think off with our products and some competitors products, however this product constitutes a whole new era for battery charging and as such we are always curious with what happens in the real world. On going to press we are not aware of any multi charger this product will not work on, however obviously we don't know, nor have we tested, every multi output charger in the world, both past and present, therefore to avoid disappointment please check as above. If this unit is not compatible with any product then please email us and we are happy to make a list (if any) to assist our valued customers.

How NOT to use this product

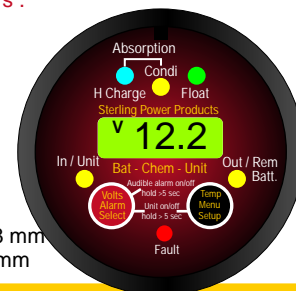


Footprint
152mm x 100mm
100mm height
weight approx 4kg

inc battery analogue temp sensor

Optional
50 deg
daisy chain
Digital trip

Remote
cut hole 54 mm
total diameter 68 mm
thread depth 44 mm



Code	Description
MC1280	12-12V up to 60 amp
MC2420	24-24V up to 30 amp
MC122420	12-24v 20 amp (at 24 v)
DC50	50 deg c daisy chain battery temp sensor (blue)
BCR	Battery Chemistry remote control plus 10 m cable