



Easy to install and easy to use, this advanced unit is designed to automatically cycle charge auxiliary 12V battery systems. The unit can charge from 12V or 24V vehicle sources as well up to 30A from solar panels.

**Features Include:**

- 3 stage, multi-volt DC to DC booster battery charger with solar input
- Dual mode solar controller utilises both PWM & MPPT functions for maximum efficiency
- Output current: 30A max
- Selectable output voltages for lithium, sealed lead acid, vented lead acid, AGM or lead crystal batteries
- Over current & temperature protections for extra product reliability
- Enhanced protection from moisture, vibration and dust with full polymer encapsulation
- High efficiency: typical >95%
- Precise under voltage protection- no need for external isolator
- Internal and remote LED indicators to show input source
- Very low standby current: <3mA
- Optional battery monitor (12V only)

### Operational Parameters

Maximum Charge Current	30 Amps
Input Operating Voltage Range	11.5V to 32V
Maximum Charge Voltage Type A	14.4V
Maximum Charge Voltage Type B	14.6V
Maximum Charge Voltage Type C	14.8V
Solar Panel Power	30W - 300W
Solar Panel $V_{MP\ min} / V_{OC\ max}$	16V / 32V
Stand by Current	0.03A
Maximum Operating Temperature	70°C
Automatic Derating Above 40°C	1A/°C
Dimensions	162mm x 71.5mm x 32.2mm
Weight	560g

### Important Notes:

- Prior to installation, you must determine the suitability of the product to ensure correct application
- Always check with the battery manufacturer for the suitability of this product for your installation
- Where lithium battery banks are involved, check that the BMS system is compatible with this product
- Due to the current required to charge the capacitors in this unit, a spark may occur during connection
- Avoid shorting the output when the unit is operational to prevent damage
- The solar panel minimum voltage is  $16V_{MP}$  and maximum voltage MUST be below  $32V_{OC}$
- Suitable for silicon-based panels such as monocrystalline, polycrystalline and amorphous with 30W – 300W
- Type A (14.4V) generally suits gel & AGM batteries
- Type B (14.6V) generally suits lead and lithium batteries
- Type C (14.8V) generally suits calcium and lead crystal batteries

### Installation:

**Important:** We recommend that the wires are connected in the following sequence:  
Ground (BLACK); main battery positive + (RED); solar panel positive + (WHITE); chemistry (ORANGE);  
ignition (BLUE); output (BROWN) and remote LED (GREEN) (optional).



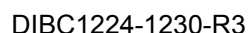
**Warning:** Ensure that you select the correct gauge and heat resistant wiring suitable for where the unit will be installed

1. Disconnect the battery supply
2. Choose a mounting position - select a position with good ventilation where air can pass freely around the unit. Avoid locations such as fuel lines, where external heat is produced or where it may be exposed to rain. Ensure the unit is installed away from flammable fumes, liquids or materials.
3. Choose an orientation that allows the built-in LED to be visible to confirm operation after installation
4. Connect wires as per our recommended connection sequence above

**NOTE:** The external LED indicator can be installed where it will provide a simple visual indication of the system status

## Connector Wiring Colour Guide

NOTE: This connection is for output monitoring of voltages.  
**DO NOT short wires or connect to any input sources!**



**Typical Operation:**



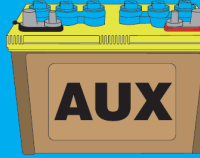






The auxiliary battery is charged from the vehicle system when the engine is running. This is detected via the ignition wire.


The unit will automatically select Boost (12V) or Reducer (24V) mode depending on the vehicle's voltage levels.

When the vehicle is off and the charger is drawing power from the solar panels, it will automatically use the solar regulator if the input is lower than 20W. Once the power increases to above 20W, to maximise efficiency the charger will automatically switch into MPPT mode.

When the vehicle is not switched on and there is no daylight is available, the unit reverts to standby mode (<0.03A).

**Operational Chart :**

 <b>IGNITON</b>  <b>SOLAR</b>  <b>AUX</b>  <b>MAIN</b>  <b>LED</b>					
<b>ON SOLAR CHARGING</b>	<b>OFF</b>	<b>&gt;16Vmp</b>	<b>&gt;9V</b>	<b>N/A</b>	
<b>ON DC to DC CHARGING</b>	<b>ON (&gt;12V)</b>	<b>N/A</b>	<b>&gt;9V</b>	<b>13V-15V 16V-30V</b>	
<b>OFF SOLAR CHARGING</b>	<b>OFF</b>	<b>&lt;14Vmp</b>	<b>&lt;9V</b>	<b>N/A</b>	
<b>OFF DC to DC CHARGING</b>	<b>OFF/ON (&lt;11.5V)</b>	<b>&lt;14Vmp</b>	<b>&lt;9V</b>	<b>&lt;11.5V</b>	

**Over Temperature**

The unit will shutdown on thermal limit and will self reset when temperatures return to a level within the operating range of the unit. This is an internally measured and monitored figure and cannot be accurately assessed from external sources or surfaces.

**Warranty Conditions:** Our products come with guarantees that cannot be excluded under the Australian Consumer Law. The customer is entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. The customer is also entitled to have the products repaired or replaced if the products fail to be of acceptable quality and the failure does not amount to a major failure. GSL Electronics (GSL) warrants that its products will, under normal use and service, be free of defects in material and workmanship for a period of three (3) years from the date of the original purchase by the customer as marked on the customer's original invoice. Please refer to our website for full warranty and return information which can be found at <http://www.gsl.com.au/faq.html>