

VEHICLE ISOLATOR (continued) & OVER-RIDE SWITCH

In order to over-ride any low voltage issues, Thumper has equipped the Outback battery pack with a low voltage 'over-ride' switch.

The 'over-ride' switch is designed to work in conjunction with the DC charger and TUR-L (provided) to allow the DC charger to work as 'ignition activated' when needed.

SWITCH IN ON POSITION: When 'ON' the ignition switch will illuminate **BLUE** and will act to immediately engage the DC charger.

The DC charger will cease to operate as an ISOLATOR when the 'over-ride is ON and the vehicle's ignition is OFF

Note: The TUR-L must be fitted to the vehicle as the Relay mount in this kit will act as the isolator required to separate the Thumper from the main vehicle battery.

SWITCH IN OFF POSITION: When the 'over-ride' is 'OFF', the DC charger will operate as normal ('voltage sensitive').

The DC charger requires a minimum voltage of 13.2 volts from the main start battery in order to engage charging. When the main vehicle battery falls below 12.7 volts (indicating vehicle is no longer charging), then the DC charger will act to isolate the Thumper Outback from the vehicle's starter battery.



The 'over-ride' switch will illuminate **BLUE** when activated. At this stage the ISOLATOR will not operate in the DC Charger.

The 'over-ride' will have no illumination when OFF. The DC charger will operate as Voltage sensitive.

Note: When using the DC model in any vehicle without the TUR-L fitted, the 'over-ride' switch must be OFF. Failure to turn switch OFF may drain main start battery.

MPPT SOLAR CHARGING

The Thumper Outback offers an MPPT Solar Regulator via the use of either the Projecta IDC25 or Redarc BCDC1225D - rated to 25 Amps.

The regulator is hardwired to the Thumper Outback DC via an independent 50 Amp Anderson connector labelled 'Unregulated solar input'.

This Anderson has been designed solely for the use of unregulated solar panels (approx. capacity 400-450 watts max.).

The input voltage (VOC) of the solar panel must be a minimum of 9 Volts in order to engage the solar charger. The voltage of the solar panel must not exceed 23 volts DC.

Note: Regulated solar panels will NOT operate via this connection. Regulated panels must be connected via the INPUT / OUTPUT Anderson

BLUETOOTH BATTERY MONITOR

The Thumper Outback DC is fitted internally with a Bluetooth monitoring device. This component of the Thumper allows the user the option to monitor the Thumper's charge capacity via a FREE downloadable app (available from the iTunes or google play store).

Included with the purchase of the Thumper is a set of instructions labelled 'battery monitor'. This highlights how to Install the Bluetooth monitoring device on a smart device. (Smart Device required but not included – may include a smart phone or tablet).

Note: The Bluetooth battery monitoring app has been designed around the parameters of a fridge operating voltages.

The Thumper unit will read 100% charged when the voltage is in excess of 12.7 volts, however, the Thumper will read 0% or completely discharged at approx. 11.2-11.4 volts. At this voltage, the Thumper battery contains approx. 30% remaining capacity. It is at this voltage that the majority of fridges on the market will cease to operate successfully, and it would be recommended to begin recharging the Thumper at this point.

The LCD digital screen on the Thumper remains the most accurate voltage reading for charge status.

The Bluetooth monitoring app provides a number of different parameters that you may choose to monitor, from vehicle input charge, voltage history graph (the information will remain stored in your Bluetooth app for a period of 35 days), cranking tests and more.

For more detailed information about the Bluetooth monitoring within the Thumper, please refer to the small information pamphlet labelled 'Battery Monitor', provided with the purchase.

* It is not essential to download the Bluetooth monitoring app to successfully use the Thumper.

240 VOLT CHARGING

The Thumper contains a number of SLA (Sealed Lead Acid) AGM (Absorbed Glass Matt) cells. These cells allow for a maximum charge voltage of 14.5 Volts. If the charger exceeds 14.5 Volts then damage will occur to the Thumper and warranty will be void.

When charging via 240 volt, it is recommended to use only a regulated or automatic battery charger. If the charger allows for an option to select the chemistry, please select **GEL**. The GEL setting allows for a lower charge voltage and will promote optimum life of your Thumper battery. If the battery charger does not contain a GEL setting, please set to AGM or NORMAL.

To confirm the compatibility of any charger, please contact BLUE APPLE THUMPER directly on 08 8398 5381

It is common to adapt a battery chargers to use a 50 Amp Anderson connector to fit direct to the Thumper. However, the charger may also be connected to the Thumper by clamping the alligator clamps to the lugs inside the 175 Amp Anderson connector on the Thumper.

Thumper DC OUTBACK



Information booklet

Available in two sizes (80 AH and 110 AH), the Thumper Outback DC incorporates the use of a sophisticated DC charger for both VEHICLE and SOLAR charge.

The characteristics of this charger may vary from chargers you have used in the past so we highly encourage you to read through the provided information carefully to ensure a complete understanding of the operation of this unit.

Due to the nature of the battery technology used, the Thumper will need to be cycled (discharged and recharged) a minimum of three times in order to achieve its full capacity as a heavy duty cyclic battery. Please note: It is not essential for you to do this before you start using your Thumper system, it is simply a guide to inform you that your Thumper will reach its optimum performance only after its third cycle.

Built in Australia by Blue Apple Thumper

Your Australian 12 Volt Specialist

Service Ph: 08 8398 5381

GENERAL INFORMATION

It is recommended to fully charge your Thumper prior to use.

On occasions, the percentage reading may show 100% when the battery is in fact in a discharged condition. Charging the battery prior to use will act to reset the gauge and will calibrate it for a correct reading.

A true and correct percentage reading will show 100% when the battery voltage is also reading 12.7 Volts or higher.

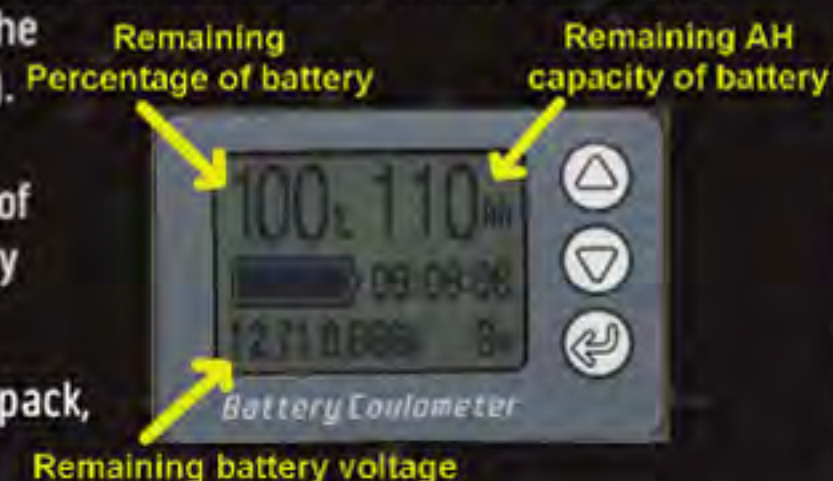
Note: The Thumper does not require discharging prior to recharging. The condition of your Thumper can be monitored by the LCD digital screen. It is important to monitor the VOLTAGE level as well as the percentage level to ensure they are calibrated correctly and a true reading can be taken.

UNDERSTANDING THE LCD DIGITAL SCREEN

The state of charge of your Thumper battery can be monitored by use of the LCD digital screen. The screen will remain active at all times, however, it will only illuminate green when the pack is in discharging (see below).

The screen will provide a reading of remaining percentage, AH capacity and battery voltage.

When no load is connected to the pack, all other readings will be zero.



TROUBLESHOOTING WITH THE LCD SCREEN

The LCD screen is 100% pre-set and will not need to be adjusted on purchase. If the screen does fall out of calibration with the Amp Hour capacity of the unit, simply follow the steps below to reset the screen:

- Fully charge the battery pack until the screen ceases to flash (must be charged to 100% with a 240 volt battery charger)
- Hold the **UP** arrow for 5 seconds. The Amp Hours will reset.

DISCHARGING:

The screen will illuminate when there is a discharge load on the battery.



The screen will provide the remaining Amp Hour capacity, current load in both Amps and Watts and the remaining run time under the current load.

Note: When running an appliance with a load that is not constant, such as a

compressor fridge, the gauge will provide a reading on remaining run time based at a continuous discharge load and will not take into consideration the cycling on the compressor. Please use this as a guide only.

The screen cease to illuminate only when all loads have been disconnected.

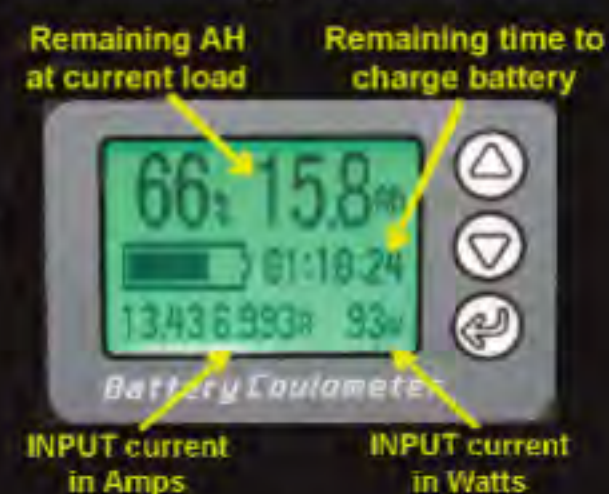
CHARGING

The LCD screen will FLASH when charging from any source, including the vehicle, 240 volt or solar. The screen will cease flashing **only** once the battery is 100% charged. The screen will read the remaining Amp Hours, time remaining until fully charged and also the input charge current in both Watts and Amps.

If the pack is charging and discharging simultaneously, then the LCD screen will show the difference between the input and output current.

The screen will act to calculate **either** the time remaining for discharging or the time remaining to charge (dependent on whether the input or output current is greater).

If the input charge is greater, the screen will flash to show charging. If the output current is greater, the screen will remain illuminated.



INTERNAL CIRCUIT BREAKER PROTECTION

The Thumper Outback DC is fitted with internal automatic reset circuit breaker protection.

The outlet sockets located on the front of the Thumper are protected internally with a 30 Amp automatic reset circuit breaker.

The 2 x 50 Amp Anderson connectors, labelled 'Input / Output' are protected by an independent 50 Amp automatic reset circuit breaker.

The Thumper Outback DC is fitted with 2 x 50 Amp Anderson connectors labelled 'Alternator input' and 'Unregulated solar input'. These outlets are wired directly into the DC battery charger via internal circuit breaker protection.

USING YOUR OUTLET SOCKETS

All sockets fitted within the Thumper are wired as bi-directional, allowing the user to charge or discharge from any outlet*.

*An exclusion to this is the USB socket, which will act purely as an outlet offering 5 volts – min of 2.2 Amp rating.

A further exception is the two externally fitted 50 Amp Anderson connectors; labelled 'Alternator input' and 'Unregulated solar input'. These connectors are wired **only** for an INPUT charge by the charging source specified (Solar / Vehicle).

HOW TO STORE YOUR THUMPER

The most common method of storage is leaving the Thumper in the vehicle, connected to the charging system. This method will ensure the Thumper is active and ready for use at all times.

Alternatively, remove the Thumper from the vehicle and store at home. Please ensure the voltage of the Thumper is reading 12.7 Volts or higher, prior to storing the unit. When in storage, charge the battery every 3 - 5 weeks before storing again.

IN VEHICLE CHARGING

The DC charger is hardwired to the Thumper's lid and is designed to alter the voltage of your vehicle's alternator output (input voltage 9-32Volts).

The voltage output produced by the DC charger will be dependent on the selected mode (for example with the Projecta IDC25: setting the mode button to GEL will allow for the charging voltage of approx. 14.2 Volts and a float voltage of 13.8 Volts).

When charging the Thumper Outback DC via the Projecta IDC25, it is recommended to always have the IDC25 set to **GEL**.

The Redarc BCDC1225D is preset and will not require any changes to be made to settings.

If the charger has reached a 'float stage', then it is common for the voltage screen on the Thumper to drop to as low as 13.2 volts under load before the charger will re-engage. The charger can sometimes take several minutes to engage again after the vehicle alternator has begun charging.

VEHICLE ISOLATOR

When left to operate normally (**no over-ride**), the DC charger will act as the in-vehicle battery isolator. This component will isolate the Thumper pack from the vehicle's starter battery when your vehicle's charging voltage falls below 12.7 volts. This function acts to protect the main start battery from discharge.

If left to operate normally, the DC charger will act as voltage sensitive. Voltage sensitive operation will require the start battery to reach and maintain 13.2 volts for approx 90 seconds in order to engage the DC charger and allow for charge to begin.

If the vehicle's output voltage falls below 12.7 volts, or fails to hold 13.2 volts on start, then the 'over-ride' button on the Thumper must be used. This 'over-ride button' acts to over-ride the **voltage** required to engage the DC charger, allowing it to start charging at a lower voltage.

When using the 'over-ride', **the isolator function in the DC becomes void (will not operate)**. If no isolator is installed in the vehicle when the over-ride is in use, it can result in discharging the main starter battery.

To overcome this issue, Thumper have provided a complete vehicle wiring loom (TUR-L) with every purchase of the Thumper Outback battery packs.

Simply install the TUR-L (provided) in the vehicle (suits all make and model vehicles) to allow the use of the 'over-ride' without the fear of discharging the starter battery.

(More on the TUR-L in separate pamphlet)