THUNDER

CONGRATULATIONS ON YOUR PURCHASE OF YOUR THUNDER BATTERY CHARGER!

For your personal safety read, understand and follow the information provided in this instruction manual & on the battery charger.

This automatic battery charger is a sophisticated IP65 water-resistant 8 stage charger, utilising fully automatic computer system control, designed to charge most 12 Volt GEL, AGM, Lead Acid and Calcium batteries.

Connection to your Weekend Escape

FEATURES & BENEFITS

- Heavy duty design.
- Fully automatic 8 stage charging.
- Pulse mode technology that reduces oxidation, evens electrolyte consistency and combats stratification in the battery, equating to longer battery life.
- IP65, CE, EMC, SAA and C-TICK Approved, making it ideal for automotive and marine situations.
- Compatible with GEL, AGM, Calcium, Deep Cycle and conventional flooded Lead Acid batteries.
- Internal charger temperature monitoring and power output control.
- Calcium charge map selected with push button and LED indicators.
- Charger selects correct charge map automatically for GEL, AGM, Deep Cycle and conventional flooded Lead Acid batteries.
- LED display showing battery capacity status and warning indicators.
- Zero volt minimum battery start up - can charge a completely discharged battery.
- Over charging, short circuit and over temperature protection.
- Reverse polarity protection with visual alerts.
- Permanent connection lead supplied with charger for vehicles that require frequent charging such as classic cars, motorcycles marine craft or heavy duty equipment.

IMPORTANT SAFETY WARNINGS

FOR AUTOMOTIVE 12 VOLT USE ONLY, NOT TO BE USED WITH DRY CELL BATTERIES.

To avoid any personal injury, please read the following safety instructions. This battery charger is not intended for use by young children or infirm persons without supervision.

1. During the charging process, do not use a naked flame near a battery. Batteries generate explosive gasses during the charging process that may explode.
2. Never smoke or light cigarettes near a battery.
3. Do not place tools on top of a battery or allow tools to fall on the battery to prevent the chance of a short circuit and sparks.
4. Always wear eye protection when charging a battery.
5. Ensure charging and testing is conducted in a well ventilated area.
6. Ensure the chargers ventilation holes are not obstructed. Inadequate ventilation may over-heat the charger and cause in-efficient operation.
7. This battery charger is not intended for outdoor operation. Do not expose it to moisture or extreme weather conditions.
8. If skin or clothing comes in contact with battery acid, flush the affected area immediately with water. Seek medical attention if necessary.
9. The battery charger contains hazardous voltages. There are no user serviceable components inside. If the AC supply cord is damaged, in order to avoid a hazard it must be replaced by the manufacturer, service agent or equally qualified person.

NOTE:

The warnings, cautions and instructions detailed in this instruction manual cannot cover all possible conditions and situations that may occur. Common sense and caution are factors which cannot be built into this product and must be supplied by the operator.

CHARGING INSTRUCTIONS

SUITABLE 12 VOLT VEHICLES

Connecting the charger to a battery in a vehicle:

The vehicle battery does not need to be disconnected or removed from the vehicle to use this charger as long as the following instructions are followed:

Ensure the ignition and all of the accessories in the vehicle are switched off as this will maximise the charge that your battery receives as well as minimising any chance of damage occurring to the vehicle onboard electronics.

If accessories in the vehicle are left on and their power consumption exceeds the output of the battery charger your battery can still discharge with the charger connected and operating.

1. Inspect the electrolyte levels in the battery and top up if required.
2. Connect the red positive (+) lead of the battery charger to the positive (+) post of the battery.
3. Connect the negative (-) lead of the battery charger to negative (-) post of the battery.
4. Plug the battery charger into the mains power supply and switch on power.
5. If you are charging a Calcium battery hold down the selector switch for 5 seconds until the green LED lights up. The charge map for Calcium batteries is now being used.
   IMPORTANT: DO NOT USE THE CALCIUM FUNCTION ON ANY OTHER TYPE OF BATTERY AS THIS COULD DAMAGE YOUR BATTERY.
6. The battery is fully charged when the THUNDER logo is fully lit and the percentage reads 100%. This is the maintenance stage of the charger, and it can be left connected in this stage indefinitely without damage to the battery, making it ideal for winter maintenance or periods where the vehicle is not going to be used for some time.

DISCONNECTING THE CHARGER FROM A BATTERY:

1. To avoid sparking, turn off and unplug the charger from the mains power supply before making or breaking connection to the battery.
2. Remove the black negative (-) then the red positive (+) of the battery charger from the battery or unplug the terminal connector lead.
3. Re-inspect the electrolyte levels in the battery and top up if required (non maintenance free and non sealed battery types only).

REVERSE POLARITY PROTECTION:

When the battery charger has been connected to the battery in a reversed polarity, the reverse warning indicator (orange LED display) will continually flash. The charger will not supply any output power until a correct polarity connection is made.

If the battery the charger is connected to is faulty the battery error indicator (red led on display) will continually flash.

EXPLANATION OF STAGES

This charger automatically employs an 8 stage charging program. These stages automatically switch from one to the next without any user input required.

- **Desulphation**
  In this initial start up stage, a high frequency voltage pulse assists in "waking up" a deeply discharged battery. This method of pulse charging can also help reduce the build up of sulfate crystals that may have formed on the battery plates during the time it was discharged. This stage will last as long as it takes the battery to reach approximately 10 volts. If the connected battery is only slightly discharged, this stage may only be activated for a short time before automatically switching to the next soft start stage.

- **Soft Start**
  After the battery is connected most conventional "Smart" battery chargers will immediately apply a high charging voltage and current output. This creates a large amount of gassing and heat generated by the battery that can cause individual battery cell voltages becoming uneven. Uneven cell voltages can cause individual cell overcharging or undercharging, lessening the overall life span of your battery. The soft start function eliminates this by starting the charge process slowly. Battery electrolyte and cell voltage is given a chance to even out prior to the main bulk charging processes, greatly increasing the batteries charging capability.

- **Bulk**
  This is the main hard charging stage, where the charger will operate at its maximum output current and voltage until it reaches the correct levels as required from the selection made with the chemistry button (different battery types require different charge levels). The charging period of this stage is determined by the capacity and charge state of the connected battery and will fluctuate between different battery types.

- **Absorption**
  After the bulk stage, the charger will automatically begin to reduce its current output whilst maintaining the required voltage (depending on the chemistry of the battery). When the current reaches a pre-determined threshold level, charging will halt allowing the next analysis stage to be performed.

- **Analysis (Testing the battery whilst charging)**
  After the absorption stage, the battery charger will start the analysis stage and will stop charging the battery for approximately one minute. At this point, if the battery voltage drops too quickly past set parameters the battery error indicator (red LED) will be flashing, your battery may be faulty. Please see your local auto electrician to have your battery evaluated. If the battery passes this test without any faults detected, it will then move to the boost stage.

- **Boost**
  After a successful result from the analysis stage, the charger will now enter the Boost stage where voltage is increased to maximum and the current is reduced to approximately 25% of the rated output. This stage brings the battery safely up to a 100% fully charged state.

- **Float**
  This stage provides a constant voltage to the battery compensating for temperature and self-discharge of the battery.

- **Maintenance**
  This stage evens out voltage between all cells and will maintain a constant pulse voltage with a very small current. This stage will remain on indefinitely whilst the battery is connected and is perfect for long term maintenance for vehicles or stand-alone batteries that will not be used for long periods of time such as winter storage. Keeping your battery on a maintenance charge will ensure it is always 100% charged and in turn will reduce the chance of sulfation, extending battery life and serviceability. During long term maintenance, it is important to periodically check fluid levels in the battery if it is NOT a sealed or maintenance free design.

SPECIFICATIONS

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INPUT VOLTAGE	230VAC / 50HZ
TYPE	8 Stage Pulse
APPROVAL	IP65, CE, EMC, SAA and C-TICK
SAFETY PROTECTION	Over charging, reverse polarity (Flashing LED), short circuit and over temperature
MINIMUM START VOLTAGE	≥0V
OPERATING TEMPERATURE	-15°C - +50°C
MAXIMUM CHARGING CURRENT	12 Amps

CHARGING VOLTAGES			
	GEL	LEAD ACID / AGM	CALCIUM
CHARGING STAGES	14.3 Volt	14.8 Volt	15.6 Volt
BOOST	14.8 Volt	15.2 Volt	16.2 Volt
FLOAT	13.3 Volt	13.7 Volt	13.7 Volt

LED DISPLAY SCREEN OPTIONS:

1. If charging a Calcium battery push the selector button for 3 seconds so the green Calcium LED is on.
2. Only use this function when charging a Calcium battery, using the Calcium charge function on any other battery may cause damage.
3. If charging a GEL, AGM or standard Lead Acid battery simply connect and forget as the charger will choose a suitable charge rate for that battery.
4. Charging voltage will display on screen at all times during the charging process.
5. Battery capacity display will show 10% for each bar of the THUNDER logo. When the THUNDER logo is illuminated the battery is fully charged (100%).
6. If reverse polarity connected, the orange LED on the display will flash.
7. The charger will not operate unless the charger is connected correctly.

Battery capacity: 20-220Ah and 310Ah for maintenance.

ONLY TO BE USED WITH 12V BATTERIES -
NEVER ATTEMPT TO RECHARGE DRY CELL BATTERIES.

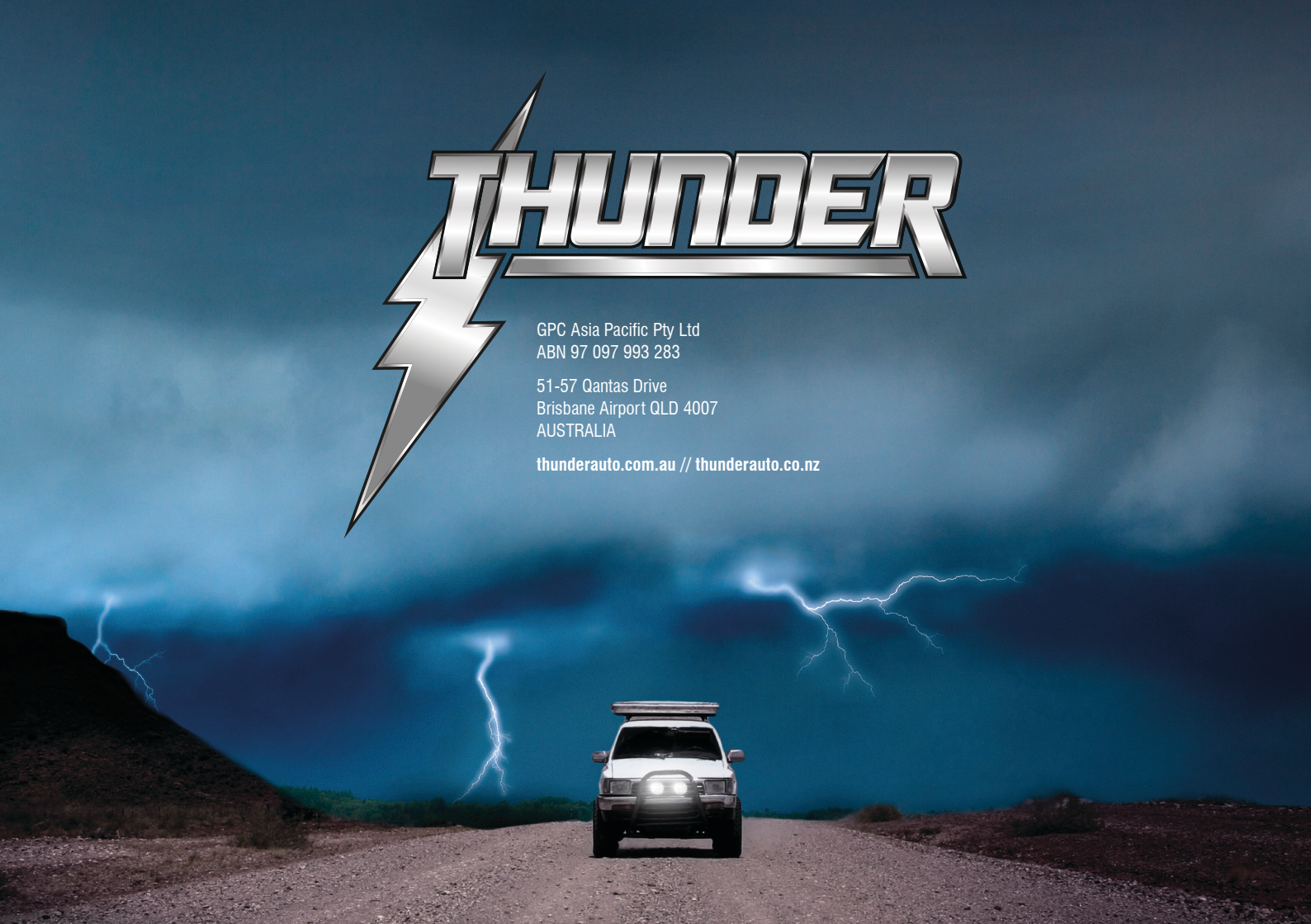
WARRANTY TERMS & CONDITIONS

When you acquire or fit a Thunder product you have the peace of mind in knowing that it is backed by a comprehensive 12 month warranty against defects in materials & workmanship. The Thunder warranty is provided in additional to any rights you may have under the Australian Consumer Law.

All claims under this warranty should be made by returning the product to the place of purchase at your expense, with the detail of the fault, proof of purchase & fitment details. If we determine that a Thunder product is defective in materials or workmanship during the warranty period, we will either repair or replace the unit.

This warranty does not apply to failure or damage to a Thunder product caused by incorrect or faulty fitment, accidental or intentional damage, failure of other products, incorrect application, incorrect voltage, environmental damage, operation of the product outside of its environmental and technical specifications, or repair or modification carried out by anyone other than an authorised repairer.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure & compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality & the failure does not amount to a major failure.



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