

# OptiMATE<sup>TM</sup> 4



**OptiMate 4:** The new reference for total battery peace of mind. Truly unique diagnostic battery optimiser for 12V lead-acid batteries up to 50Ah, whether sealed maintenance-free, gel, or "flooded" type with filler caps.

Available in most countries with 220-240V supply, and from November 2008 also in Japan : click on "Where to Buy" (at left) for the contact details of your national importer.

## YES, ENGINEERING CAN BE BEAUTIFUL

The stylish, sealed, weatherproof OptiMate 4 & its stunning new LED control panel are just the introduction to "The New Reference".

Like all OptiMate models before it, the micro-processor controlled OptiMate 4 can save neglected batteries. The OptiMate 4 is even more effective, with a new dual-stage RECOVERY + TURBO RECOVERY action. For modestly neglected deep-discharged batteries the RECOVERY mode engages automatically, while the TURBO RECOVERY mode engages for more severely neglected batteries

Like all other OptiMates, the OptiMate 4 then charges the battery, verifies that the battery is as fully charged as its basic state of health allows, and then checks for & detects dead battery cells. But OptiMate 4 adds the following new features :-

- Maximum output current increased to 0,8A without increasing energy consumption
- 48 hour time limit on stages up to the first of the cyclic tests for battery drain to avoid wasting time and energy on batteries with a shorted-out cell

- 19 possible LED indications displayed on 10 LEDs on the stunning new control panel
- 5 possible results of the cyclic hourly tests for power drain /retention are displayed on a combination of green, yellow & red TEST LEDs
- IP64 weatherproof sealed housing with built-in mounting lugs (replaceable if damaged for example by over-tightening a fixing screw)
- new cable bushings avoid insulation stress in ultra-cold temperatures
- new "glide-guide" connector pin inserts avoid "sticky" connections.

But, the most important attribute of the OptiMate 4, as with all OptiMates, is the safe, optimal maintenance of your battery during long term storage, achieved by its gentle maintenance cycle which automatically allows the battery to rest for 30 minutes of each hour of the maintenance cycle while it remains connected.

The automatic multi-stage programme engages as soon as the OptiMate is connected to a 12V battery retaining at least 2V :-

1. The OptiMate 4 immediately checks if the battery retains at least enough voltage to enable the programme, and whether the battery is deep-discharged ("sulphated") or not.
2. For neglected batteries, the OptiMate 4 initialises the recovery mode, initially limiting the applied voltage at 16V, and if necessary for sulphated batteries, engaging TURBO recovery at a voltage of up to 22V\*\* at low current for up to 2 hours, to recover the battery to a condition in which it can accept a charge more "normally".
3. As soon as the circuit detects that this point has been reached (immediately for most batteries), the "bulk charge" mode engages and delivers current at a constant rate of 0,8A to charge the battery.
4. When the battery-sensing circuit observes that charge progress is sufficient, the unique 'verification' stage engages. The voltage is limited at a lower level, & if sensed necessary, a voltage pulsing action achieves further desulphating & tops off the charge. When this has been verified, or if after 48 hours from connection the battery has been unable to accept & retain adequate charge, the next stage engages.
5. The OptiMate then ceases to offer current to the battery for 30 minutes while it monitors the unsupported battery voltage so as to check whether the battery can retain sufficient charge to crank an engine, before the long term maintenance and test cycle commences.
6. During the following 30 minutes the OptiMate offers the battery a supporting & maintaining charge, but only to the extent necessary to counter any losses or connected loads such as an electronic alarm or immobiliser. Overcharging and/or overheating of the battery is ruled out by this 50% duty cycle whereby the battery is interactively maintained for 30 minutes and then rests during the power drain tests of each alternative 30 minutes. The battery is always 100% in optimal service condition, but never overcharged.

**\*\*The OptiMate's high voltage desulphation mode cannot engage unless the battery is first disconnected from the vehicle's electrical system. However, even if the battery is not disconnected, the OptiMate cannot damage sensitive vehicle electronics as the higher voltage mode can only engage if minimal or zero current is flowing into the battery. Suggestions of possible risk on some internet forums or chat sites are based on inadequate consideration of the technical facts and are incorrect.**

- Meets all relevant EN & IEC norms and CE directives.
- Comprehensive selection of connection accessories including an output extension set.
- 2 year limited warranty.