

# OptiMate III

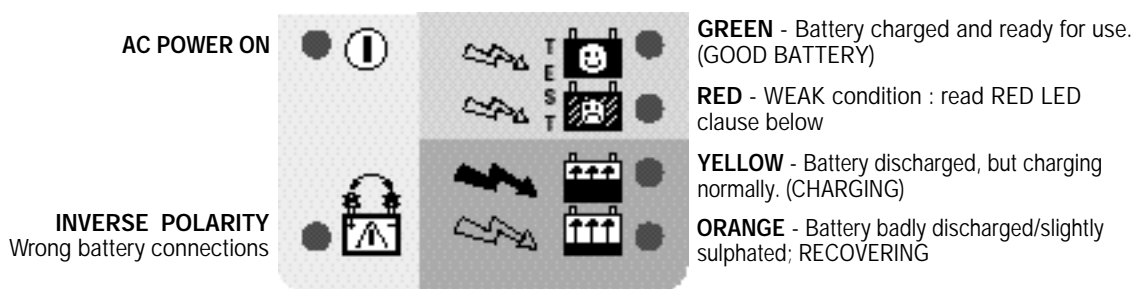
Automatic charger for 12V lead/acid batteries of from 2 to 32 Ah. Not for charging dry cell or NiCad batteries.  
Input supply : 220-240V~. Output current : 0.6A, 12W (max.).

## Instructions for Use: IMPORTANT: Read before charging.

**SAFETY WARNING & NOTES** Batteries emit **EXPLOSIVE GASES - prevent flame or sparks near batteries.** Disconnect AC power supply before making or breaking DC/battery connections. Battery acid is highly corrosive. Wear protective clothing and avoid contact. In case of accidental contact wash immediately with soap and water. Check that the battery posts are not loose; if so, have the battery professionally assessed. If the battery posts are corroded, clean with a copper wire brush; if greasy or dirty, clean with a rag damped in detergent. Only use the charger if the input & output leads and connectors are in good, undamaged condition. If the input cable is damaged, it is essential to have it replaced without delay by the manufacturer, his authorised service agent or a qualified workshop, to avoid danger. Protect your charger from damp and humidity, acid & acid fumes both during use and in storage. Damage resulting from failure to do so is not covered by warranty. Distance the charger from the battery during charging to avoid acid contamination.  
**Place the charger on a hard, flat surface, but NOT on plastic, textile or leather. An optional wall mounting bracket is available.**

**CONNECTING TO BATTERY** : To connect the battery to the charger, 2 sets of interchangeable connection sets are supplied, the one with crocodile clamps for charging the battery off-vehicle, the other with metal eyelets for permanent connection to the battery posts for easy connection to maintain the battery on-vehicle. To charge a car battery or if using the battery clamps, first disconnect & remove the battery from the vehicle and place it in a well ventilated area. **NOTE : If the battery is deeply discharged, it is essential to disconnect the battery from the vehicle before connecting the charger for recovery.** If the posts are solid, consult a professional service agent for assistance in attaching the metal eyelets to the battery posts. Distance the polarised two-pole connector (for connection to the charger) as far as possible from the battery and make sure it cannot foul any moving part of the vehicle and cannot be damaged by sharp edges. To prevent grime, dirt & damp from entering the polarised connector, firmly close its resealable rubber protective capsule each time you disconnect the charger at the two-pole connector. Replace any burnt fuse only with a similar new fuse of identical type and rating, T 10A.

### LED (light emitting diode) indicator information panel



### Using the OptiMate

**1)** Connect the charger to the battery : RED clamp to POSITIVE (POS, P, +) terminal and BLACK clamp to NEGATIVE (NEG, N, -) terminal. If the «INVERSE POLARITY» LED indicates, your battery connections are inverted. The charger is protected against this error; no damage will result and it will automatically de-activate. Disconnect clamps and reconnect correctly.

**2)** Connect the charger to a mains supply socket providing AC supply of 220 to 240V. The «POWER ON» LED should illuminate. If not, check your AC supply and the connection to it.

**3)** The orange RECOVERING LED (bottom right on LED panel) will light when all correct connections are made and if the battery voltage is above 2 Volts. If the battery is very flat (deep-discharged or sulphated) the orange LED may continue to indicate for up to 2 hours while a special high voltage (about 20V maximum) is applied to force a very small fixed current (200mA) into the battery in a recovery attempt. After 2 hours maximum, or, as soon as the battery can accept the normal charging programme, (which for most batteries will occur immediately on connection) the orange RECOVERING LED will be replaced by the yellow CHARGING LED.

4) a) The CHARGING stage (yellow LED) delivers a constant current of 0,6 Amps into the battery, whose progressively rising impedance will cause the charging voltage to increase until 14,3V, when the OptiMate will start the absorption & verification stage.

b) The charging voltage is now limited at 13,6V during 30 minutes. Should the monitored voltage reduce by 300mV or more, or the current drawn by the battery exceed 200mA during these 30 minutes, the programme reverts immediately to the main CHARGING stage & 4) a) is repeated. The OptiMate thereby automatically ensures a full charge before starting the maintenance stage.

5) The maintenance (float voltage) stage includes an automatic test for battery self-discharge, repeated during 30 minutes in each hour as long as the battery remains connected. During 30 minutes no current at all is offered to the battery, and the circuit just monitors the battery voltage for stability. If the battery voltage falls below 12,3V the red WEAK LED in the TEST panel will indicate a problem but the battery will then continue to be maintained in float voltage mode (13,6V) until disconnected. See separate clause on red LED indications below. If the battery voltage remains greater or equal to 12,3V during the 30 minutes test the green GOOD BATTERY LED will indicate and continue doing so unless a failure of a subsequent test causes the red LED to indicate. With the green LED indicating, during the other 30 minutes of each hour, the OptiMate allows the battery to draw up to 200mA of current to support any connected accessories or alarms, or losses due to deteriorating vehicle wiring.

6) RED LED: the red WEAK LED means that after being charged the battery's voltage is not being sustained or that despite recovery attempts the battery was irrecoverable. This may be due to a defect in the battery itself, such as a short-circuited cell or total sulphation, or, if the battery was still connected to the vehicle's wiring system, the red LED may be signalling a loss of current through deteriorating wiring or a degraded switch or contact. Always remove the battery from the vehicle, reconnect the OptiMate and allow it to proceed through its programme once more. If the green LED then indicates, the fault is in the vehicle wiring. If the red LED indicates, it is the battery which is suspect and should be taken to a professional workshop for load testing on a BatteryMate diagnostic load-tester/charger. It is important to note that even if the red LED does indicate, the battery will continue to receive float charge support at 13,6V until disconnected, so as to protect it from deterioration as far as feasible.

7) Maintaining a battery for extended periods : After activating the charger you should observe the LED indications every few hours until either the green GOOD or red WEAK battery LED indicate. If the red WEAK LED indicates, disconnect and remove the battery from the vehicle then reconnect it to the charger for a fresh trial. Batteries indicated as WEAK or suspected as being defective for whatever reason should not be left connected to the charger for extended periods. Check the battery temperature after the first 24 hours of connection. If the battery casing temperature exceeds about 40°C at any spot, disconnect it and have it professionally tested using an accurate electronic tester specifically designed for that type of battery. At least once every two weeks, check that the connections between the charger and battery are secure, and, in the case of batteries with filler caps on each cell, disconnect the battery from the charger, check the level of the electrolyte and if necessary, top up the cells with distilled water, then reconnect. When handling batteries or in their vicinity, always take care to observe the SAFETY WARNINGS above.

8) Disconnect the OptiMate first from the AC mains supply and then from the battery. Always disconnect from the AC mains before reconnecting to the same or another battery.

### **LIMITED WARRANTY**

**TecMate (International) SA, Sint-Truidensesteenweg 252, B-3300 Tienen, Belgium, makes this limited warranty to the original purchaser at retail of this product. This limited warranty is not transferable.**

TecMate (International) warrants this battery charger for two years from date of purchase at retail against defective material or workmanship. If such should occur the unit will be repaired or replaced at the option of the manufacturer. It is the obligation of the purchaser to forward the unit together with proof of purchase, transportation or mailing costs prepaid, to the manufacturer or its authorized representative. This limited warranty is void if the product is misused, subjected to careless handling, or repaired by anyone other than the factory or its authorized representative. The manufacturer makes no warranty other than this limited warranty and expressly excludes any implied warranty including any warranty for consequential damages.

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