

AccuMate



Instructions for Use: IMPORTANT: Read before charging.

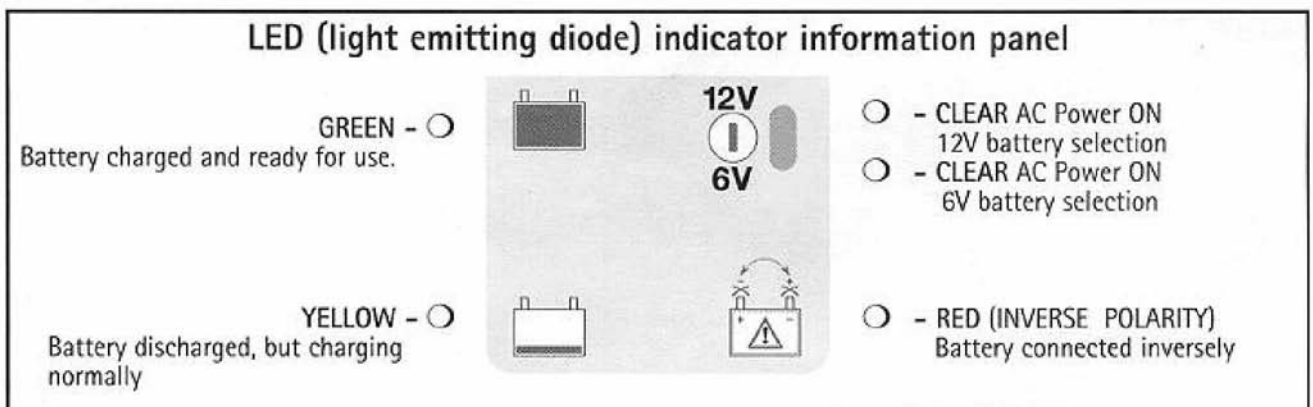
WARNING! Batteries emit EXPLOSIVE GASES - prevent flame or sparks near batteries.

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. NOTE: To connect charger to battery, crocodile clamps for quick connection and a cordset with eyelets for permanent connection are supplied. If using battery clamps, disconnect and remove your battery from the vehicle before charging and place in a well ventilated area. To connect the cordset, consult a professional service agent for assistance. Ensure the polarised two-pole connector (for connection to charger) is situated away from the battery and restrained so as not to impede operation of any moving part of the vehicle. Prevent ingress of grime and dirt to polarised connector. Protect your charger from damp and humidity, both during use and in storage.

IMPORTANT! This charger has a charging output selector switch for charging either 6V or 12V rechargeable lead-acid batteries. IT IS ESSENTIAL TO ENSURE THAT THE SELECTOR SWITCH IS CORRECTLY POSITIONED ACCORDING TO THE VOLTAGE OF THE BATTERY TO BE CHARGED BEFORE THE CHARGER IS CONNECTED TO THE BATTERY. 6V batteries have three cells, 12V batteries have six cells. If unsure, contact the battery supplier before connecting the AccuMate.

WARNING! Connecting a battery to the AccuMate without ensuring the charging output selector is correctly positioned may cause a hazard resulting in the production and accumulation of dangerous explosive gases as well as the overheating and potential destruction or even the explosion of the battery.

ALWAYS CHECK THE SELECTOR SWITCH POSITION!



Charging procedure

- 1) Make sure you identify whether the battery to be charged is a 6V or a 12V lead-acid battery and place the small charging output voltage selection switch in the correct position, refer to the above panel. It is essential do this before making any battery or AC mains connections. Consult a specialist if unsure
- 2) 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 (red) should indicate, 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.
- 3) Connect the charger to a mains supply socket providing AC supply of 220 to 240V. The 'POWER ON' led (clear) opposite the appropriate charging output voltage selection should illuminate. If not, check your power supply or connections.
- 4) When connections are correct, the 'POWER ON' and the YELLOW (charging) LED should light initially if only very briefly. (It will be succeeded by the GREEN LED if the battery is fully charged or sulphated).
NOTE: If only the 'POWER ON' LED is illuminated after correct connections have been established, the battery voltage was below 1V and the battery is probably irrecoverable. As long as the charger is connected to the AC supply and battery, the status & condition will be indicated by a LED as per panel above.
- 5) The charger will automatically charge, then maintain the battery very close to fully charged unless the battery is defective. During the 'CHARGING' cycle (YELLOW charging LED) the battery is charged at the main constant current output until the monitored voltage rises to 14.3V. Charging then changes automatically to 'float' mode, with the voltage limited at 14.3V, so that the continuously monitored current will gradually reduce. When the current falls to 200mA, the charging voltage is then limited to 13.8V and the GREEN LED will indicate battery is ready for use. For as long as the charger remains connected it will continue to maintain the battery with a charge voltage limited at 13.8V, thus allowing the battery to draw a small current to compensate slight discharge, whether self-discharge or due to any alarm system or other current loss in the vehicle or other circuit. Should any factor place a load on the battery such that the battery's need for charging current rises to 200mA, the circuit will automatically revert to the maximum constant current charge stage and proceed through the charging programme once more.
- 6) It is recommended practice to disconnect the AC mains before disconnecting the battery connections although the circuit will instantly disable the charging output on disconnection of the battery.
- 7) Refer to the following section on application hints and interpretation of LED indications to obtain the most effective use of the AccuMate.

Application Hints and Interpretation of 'LED' indications of Battery Status

General hints: the AccuMate has been designed to charge 6V or 12V lead-acid batteries that have been discharged during nor-mal operation and that have not been damaged through extended non-use, physical misuse or internal defects. Non-use of battery for an extended period during which the battery is left to self-discharge without being re-charged causes internal chemical change ('sulphation') which AccuMate will not be able to reverse. Failure to maintain the correct electrolyte levels within batteries requiring occasional topping up with distilled water is also likely to result in damage to the battery which may be irrecoverable with the AccuMate. Technically advanced professional level chargers such as the **BatteryMate** may still be able to recover such neglected batteries, though full recovery to as new status may never be possible. All unused batteries will maintain their charge best when stored in a cold or cool environment. The warmer the surroundings the faster the battery will self-discharge.

1. Once you have connected the AccuMate to your battery, LEAVE it connected for the 'maximum' time given for the battery size in the table below, OR, until you observe a steady green LED indication. If you do not know the rated capacity of the battery, use the category indications in the table. In most cases, recharging of a discharged battery is indicated by a steady yellow LED, for not more than the 'maximum' time indicated in the table, succeeded by a steady green LED. When the steady green LED indicates, you can safely leave the battery connected to the AccuMate for longer than the 'maximum' time indicated below, however, unless a steady green indication is observed, there may well be some defect or problem within the battery, in which case there is no point in leaving it connected any longer.

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2. **No LED indication** except the 6V or 12V AC Power ON LED and the reverse polarity (RED) LED: there is mains power to the AccuMate but your battery is connected incorrectly to the charger. No damage will result, as AccuMate is electronically protected. Reconnect the clamps making sure the RED clamp is on the RED or 'P' or + battery post and the BLACK clamp on the BLACK or 'N' or - battery post.

3. **No LED indication** except either the 6V or 12V selection AC mains 'ON': there is mains power to the AccuMate but the battery is too deep-discharged or sulphated. AccuMate cannot recover it. Check your lead connections.

4. **Yellow and green LED's** both flashing rapidly alternately: this may occur in cases of a deep-discharged (or perhaps slightly sulphated) battery, which the AccuMate is trying to recover. This is possible when the battery has one or other internal defect but the AccuMate is still trying to recover the battery. LEAVE connected for up to the 'maximum' time given below or until a steady green indication is observed, if sooner.

5. **Yellow LED** flashing or pulsing: this may occur in cases of a deep-discharged (or perhaps slightly sulphated) battery that the AccuMate is trying to recover. LEAVE connected for up to the 'maximum' time given below, or until a steady green indication is observed if sooner.

6. **Steady yellow indication:** LEAVE connected for up to the 'maximum' time given below or until a steady green indication is observed if sooner. In most cases, the charging programme will bring the battery to green status within the time period given in the 'normal hours' column in the table below. If the green LED does not indicate within the 'maximum' time, the battery is probably damaged internally.

7. **Steady green indication:** the battery is fully charged and ready for use. However you may leave it continuously connected to the AccuMate if you wish to maintain it fully charged over a period of non-use, even over a few months. NOTE: if a steady green LED indication occurs immediately upon connection of a battery known to have been discharged, deep-discharged or unused for some months prior to connection, the battery may well be deep-discharged. In such cases, leave connected for the 'maximum' charging time per the table. If flashing or pulsing of the green and/or yellow LED's occurs during this time, refer to 4 and 5 above. If the battery proves unusable thereafter, take it to a professional service dealer equipped with a BatteryMate recuperative charger/ load tester.

8. The table below gives approximate maximum charging times from a totally discharged flat battery to fully charged status. This time is roughly equal to the Ampere-hour capacity rating of the battery, so if this is printed on the battery you may easily form your own estimate. However it is only in cases such as car headlights being left on for a week or the battery being unused and kept in a warm environment for months that the battery will become totally discharged. The 'Normal Hours from Flat' indicates the average charging time to attain a fully charged battery from a status whereby the battery is unable to turn the engine.

9. Table

Vehicle description	Battery capacity	Normal hrs from flat	Maximum time
500-900cc m/cycle/ATV/Snow-m.	7 to 14 Amp-hours	3 to 5 hours	10 hours
Touring motor-cycle or lawn tractor	15 to 30 Amp-hours	6 to 10 hours	20 hours
Small car up to 1400cc	31 to 44 Amp-hours	11 to 15 hours	40 hours
Medium car, 1400-1800cc	45 to 55 Amp-hours	16 to 20 hours	50 hours
Touring car, boat, tractor	56 to 75 Amp-hours	21 to 25 hours	60 hours

LIMITED WARRANTY

TecMate (International) SA/NV, 252 Sint-Truidensesteenweg, 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. Any damage to the unit, it's leads or accessory parts resulting from acid or fluid contamination, exposure to damp or humidity or from physical damage is NOT covered by warranty. The manufacturer makes no warranty other than this limited warranty and expressly excludes any implied warranty including any warranty for consequential damages. THIS IS THE ONLY EXPRESS LIMITED WARRANTY AND THE MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES ANYONE TO ASSUME OR MAKE ANY OTHER OBLIGATION TOWARDS THE PRODUCT OTHER THAN THIS EXPRESS LIMITED WARRANTY.