

CARE OF THE MAIN BATTERY ON STORMWATER SAMPLERS TR-3000 AND TR-3010

CHARGE METHOD

High performance and long service life of batteries in the Durham Geo Storm Water Samplers depend upon correct charging. Improper charging modes or inadequate charging equipment result in decreased battery life and/or unsatisfactory performance. Any of the conventional charging techniques may be used, but to obtain maximum service life and capacity, along with acceptable recharge time, constant current/constant voltage charging is recommended.

A charge quantity of 105-120% of the previous discharged quantity is needed for fully charging the battery. The charging voltage of battery decreases with increasing temperature and increases with decreasing temperature. At a temperature below 5°C (41°F) or above 35°C (95°F), temperature compensation for charging voltage is necessary. At ambient temperature the compensation will not be necessary.

Overcharging should be avoided: As a result of too high a charge voltage, excessive current will flow after reaching full charge, causing decomposition of water in the electrolyte and, hence, premature aging.

Undercharging should also be avoided: If too low a charge voltage is applied, the charger current output will essentially stop before the battery is fully charged. This allows some of the lead sulphate to remain on the plates which will eventually reduce capacity.

STORAGE TEMPERATURE	RECHARGE INTERVAL AND METHOD
Below 20°C (68°F)	9 months, charge for 16 hrs at 14.4 V
20°C - 30°C (68°F - 86°F)	6 months, charge for 16 hrs at 14.4 V
above 30°C (86°F) (avoid this storage condition)	3 months, charge for 16 hrs at 14.4 V

CHECKING BATTERY CHARGE IN THE FIELD

Using a voltmeter, check the voltage across the battery terminals.

READING	BATTERY CONDITION
12.7 – 12.8 V	Battery is fully charged.
12.4 V	Battery has about 65% of its charge and needs to be recharged.
10.5 V	Battery is discharged to the point where it must not be used on the sampler. It needs a full recharge cycle.
5 V or less	Battery is totally discharged to the point where it may be damaged or may not be able to be recharged fully.

HANDLING INSTRUCTIONS

- Do not short the terminals.
- Do not reverse polarity.
- Do not let the battery be discharged totally or it will damage it.
- Do not store gel cell batteries in an uncharged condition.
- Do not place the battery near or in fires.
- Do not use the battery in a container or bag without proper ventilation.
- Operate at a temperature between 5°C to 35°C (40°F to 90°F) for cycle use.
- To properly store the battery, remove battery from equipment or charger and store in a dry and cool place. Immediately recharge after discharging. If sulfuric acid from the battery is spilled on skin or clothing, wash immediately with water. If acid comes in contact with eyes, flush with large amounts of water and immediately see a doctor.
- Avoid mixed use of batteries. Different capacities, histories, or manufacturers of batteries may cause damage to the batteries or other equipments.