

# SERVICE BULLETIN

## Testing Batteries: Temperature Compensation

To accurately determine the state of charge in a flooded wet cell battery, the cell voltage and specific gravity of the electrolyte must be adjusted to the temperature of the electrolyte.

Due to that modern "golf cart" batteries do not allow testing of individual cells in a battery, the voltage in the table must be multiplied by the number of cells in the battery.

The specific gravity of the electrolyte has a direct, linear relation to the level of charge. Typically, at 80°F a reading of 1.100 (1100) is considered fully discharged and a reading of 1.275-1.300 (1275-1300) is considered fully charged.

### Warnings:

- **Explosive mixtures of Hydrogen gas are present within battery cells at all times. Do not work with or charge batteries in an area where open flames (including gas furnace or water heater pilots), sparks, cigarettes, or any other sources of combustion are present. Always provide ample ventilation in rooms where batteries are being charged. Failure to do so may result in severe bodily injury and/or property damage.**
- **Battery electrolyte is poisonous and dangerous. It contains sulfuric acid. Avoid contact with skin eyes or clothing. Wear rubber gloves and safety glasses while servicing batteries. DO NOT INGEST! This may result in severe bodily injury.**
- **A battery is a live electrical source. It cannot be disconnected or neutralized. Do not drop any tool or conductive object onto the battery. A conductive object that comes in contact with the battery terminals will initiate a short circuit of the battery. This could cause the battery to explode resulting in severe bodily injury and/or property damage.**

Electrolyte Temperature (°F)	Electrolyte Temperature (°C)	Add or Subtract to Hydrometer's SG Reading	Add or Subtract to Digital Voltmeter's Reading
160	71.1	+0.032	+0.192
150	65.6	+0.028	+0.168
140	60.0	+0.024	+0.144
130	54.4	+0.020	+0.120
120	48.9	+0.016	+0.096
110	43.3	+0.012	+0.072
100	37.8	+0.008	+0.048
90	32.2	+0.004	+0.024
80	26.7	0	0
70	21.1	-0.004	-0.024
60	15.6	-0.008	-0.048
50	10	-0.012	-0.072
40	4.4	-0.016	-0.096
30	-1.1	-0.020	-0.120
20	-6.7	-0.024	-0.144
10	-12.2	-0.028	-0.168
0	-17.8	-0.032	-0.192