



electric transportation engineering corporation™

Instructions for Installing a Battery Identifier II on a Vehicle Equipped with Flooded Batteries.

The ETEC Battery Identifier II (BI2) is a compact module that is mounted to an electric vehicle's battery and is used to identify and communicate the unique charging parameters of that battery to ETEC's line of GSE smart chargers. The BI2 is ruggedly designed for operation in abusive industrial applications. However, the corrosive nature of battery electrolyte will corrode terminals and wire over time. Flooded batteries present a unique challenge in that liquid electrolyte and even acidic vapors find their way out of the battery container during normal operation and charging of the battery.

To improve the reliability and longevity of the BI2 when used with flooded batteries, ETEC recommends the following guidelines be used when installing (or replacing) a BI2 on a vehicle equipped with flooded batteries:

CAUTION! *Following these recommendations require working on and around traction batteries that may exhibit dangerously high voltage. Only trained and qualified technicians should work around batteries*

- Where flooded batteries are used, the BI2 should be mounted somewhere off the battery so as to avoid contact with any electrolyte that accumulates on the battery. If an ETEC Interface box is used, the BI2 can be mounted inside the enclosure. The BI2 can also be mounted in the same general area as the motor controller. It is important to note that if the battery is changed out for one of a different brand or model, new parameters will need to be programmed into the BI2 to ensure proper charging. Contact ETEC Field Services at 1-888-ETECEVS for support.
- A two-wire harness is provided with the BI2 kit to provide power from the battery to the BI2 circuits. On sealed batteries, these wires are normally terminated with ring terminals and screwed directly to the B+ and B- terminals on the battery. With flooded batteries, however, liquid electrolyte tends to accumulate on the top of the battery which quickly corrodes these terminals and the wires themselves. To alleviate this problem, find an unswitched battery voltage source away from the battery; this can usually be found where the battery cables terminate at contactors near the motor controller. Be sure that the full battery voltage is present even with the vehicle turned off so as to avoid battery charger faults.

- The temperature probe still needs to be mounted on the battery. The probe should be attached either to the top of a battery cell (away from the lead post or strap). Clean the top of the battery using soapy water and rinse clean and dry completely. Use a silicone adhesive to affix the temperature sensor to the battery. Cover the sensor with a square of styrofoam insulation that fits snugly and completely over the sensor (use the silicone to secure the foam to the sensor). In situations where a battery cover sits close to the top of the battery where it might radiate heat from direct sunlight and cause erroneously high temperature readings, mount the temperature probe to the side of the battery case. Find a location low enough on the tray where the sensor will not see direct sunlight and will not be crushed if the battery shifts during vehicle operation. Use the same technique of affixing the sensor to the case with silicone adhesive and then covering the sensor with a thick piece of styrofoam. If the cable between the temperature sensor and its connector is too short to reach the BI2, a section of cable can be spliced into the middle to increase the overall length. Use a two-conductor cable with minimum 22 gauge wire. Make sure the spliced connections are well soldered or otherwise well made.