



EV Fuel Gauge Driver

Installation and Instructions For Use

Introduction

The single most important piece of information every EV driver needs to know is the state of charge of their battery. This device offers an elegantly simple solution, using the vehicle's original fuel gauge to display your EV battery's state of charge. As well as simplifying installation, using the original fuel gauge offers the most intuitive feedback for drivers, particularly those unfamiliar with EV technology.

Installation

Disconnect one of the cables from your battery pack, insert it through the hole in the blue current sensor, then reconnect. The top side of the current sensor (with the writing on it) should be oriented towards the negative terminal of your battery pack.

Make sure the Fuel Gauge Driver itself is secured so it doesn't move around while driving. There are four 3mm holes at the corners of the unit which may be used for fastening the device to a mounting bracket.

The black wire must be connected to ground and the red wire goes to a *permanent* 12V supply. You may optionally have a switch on the 12V line. Cutting power to the device will reset it (to the *Full* position).

The white wire attaches to the fuel tank sensor wire from your instrument cluster (the wire which originally went to the sensor in your petrol tank).

Tuning

Adjustment of the device is achieved via the single blue tuning pot on the circuit board. Turn anticlockwise for smaller packs (down to about 20Ah), and clockwise for larger packs (up to about 500Ah).

Initial calibration is usually performed during a discharge cycle. After installing the Fuel Gauge Driver, drive the vehicle until the pack is getting low (for lithium packs 3.2V per cell is a good benchmark) then turn the pot until the fuel gauge needle sits on *Empty*.

We recommend setting the *Empty* point to be around an 80% discharge (i.e 20% capacity remaining) to provide a small safety buffer and to discourage drivers from frequent deep discharges, but you are free to set the *Empty* point at whatever depth of discharge you prefer.

"Gotchas"

The EV Fuel Gauge Driver only offers an indication of battery state of charge, and while its current sensor is quite accurate the non-linear nature of some vehicle fuel gauges can result in an imprecise reading. It should always be used in conjunction with a good battery management system which can ensure that the battery cannot be damaged through overcharging or overdischarging.

When the Fuel Gauge Driver is first powered up, it calibrates the zero point of the current sensor, so it is paramount that the current flowing at this time is truly zero. It is important that your EV does not have any parasitic loads on the traction pack when the key is off. (In fact it is considered bad practice for any devices to be running off the traction pack when the key is off, partly for safety reasons, plus they can flatten the battery if the vehicle is left idle for extended periods of time.)

