



Electric Blue Motors

Background

Electric Blue Motors (EBM) converts gasoline/engine propelled cars to Electric Vehicles (EVs). In previous years much of similar conversions have been done by hobbyists. Many of the components used for these conversions fall into one of three categories, they are: extremely expensive, not designed for automotive applications, or don't exist. EBM has been working to bridge this gap- we are creating components that don't exist, redesigning components to adapt to the automotive environment, and/or creating more economically feasible components. This project will entail creating an inexpensive motor controller that will replace the few on the market that are over priced.

The Project

We propose to hand over this project over to a senior design team at NAU. We would like a team of seniors to develop and test a motor controller to power DC Brushed Motors of various sizes (6.7", 9", 11"). EBM would like to see a working prototype at the end of the spring semester.

Knowledge and Skills Required

Students should be familiar with power systems, Pulse Width Modulation (PWM), and embedded systems. Many ideas and concepts involved with our EVs can be taught through the semester, so students need not be familiar with EVs.

The Details

We would like a motor controller comparable to the Curtis Instruments 1231C and the LogiSystems 120-144V 750A Controller. The motor controller should be capable of a voltage rating of 96-144V and at least 500A. The use of a Pulse Width Modulation (PWC) IC or a microcontroller will be determined through this process. For the moment, we suggest a PWM IC to minimize costs. The motor controller must implement a standard 0-5k Pot to control the motor speed.

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