

Lafayette College | Electrical and Computer Engineering

Dynamometer Interconnectivity Document

ECE 492 Spring 2017

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Overview

The purpose of this document is to provide wiring and interconnect information about the Dynamometer subsystem and all its components for the Lafayette Formula Electric Vehicle as of spring 2017.

For information about the dynamometer, see the User Manual and Maintenance Manual, both of which can be accessed here:
<https://sites.lafayette.edu/ece492-sp17/subsystems/dyno/>

Dyno System Overview

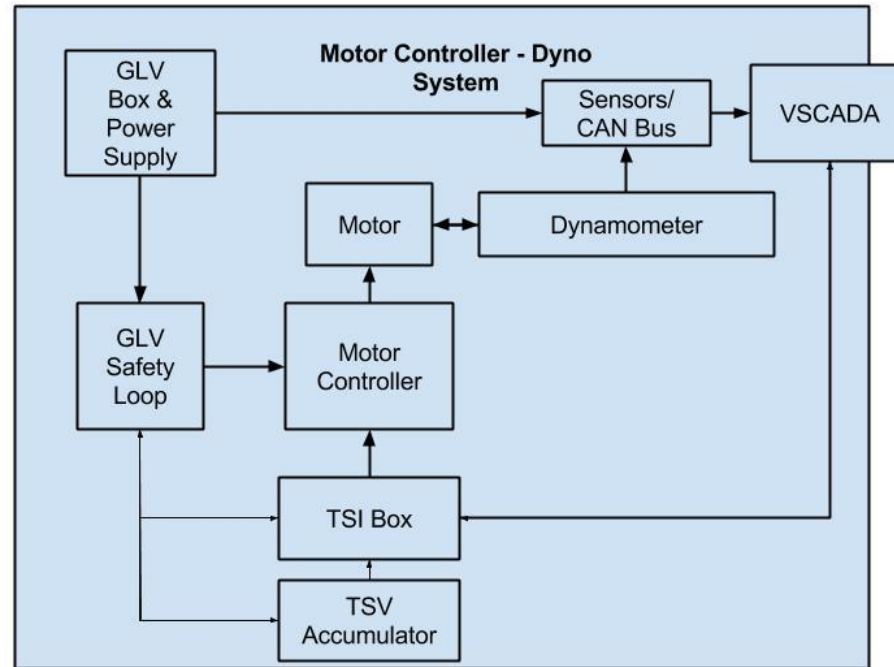


Figure 1. Motor Controller/Dyno System Overview

Motor and Motor Controller Connection Points

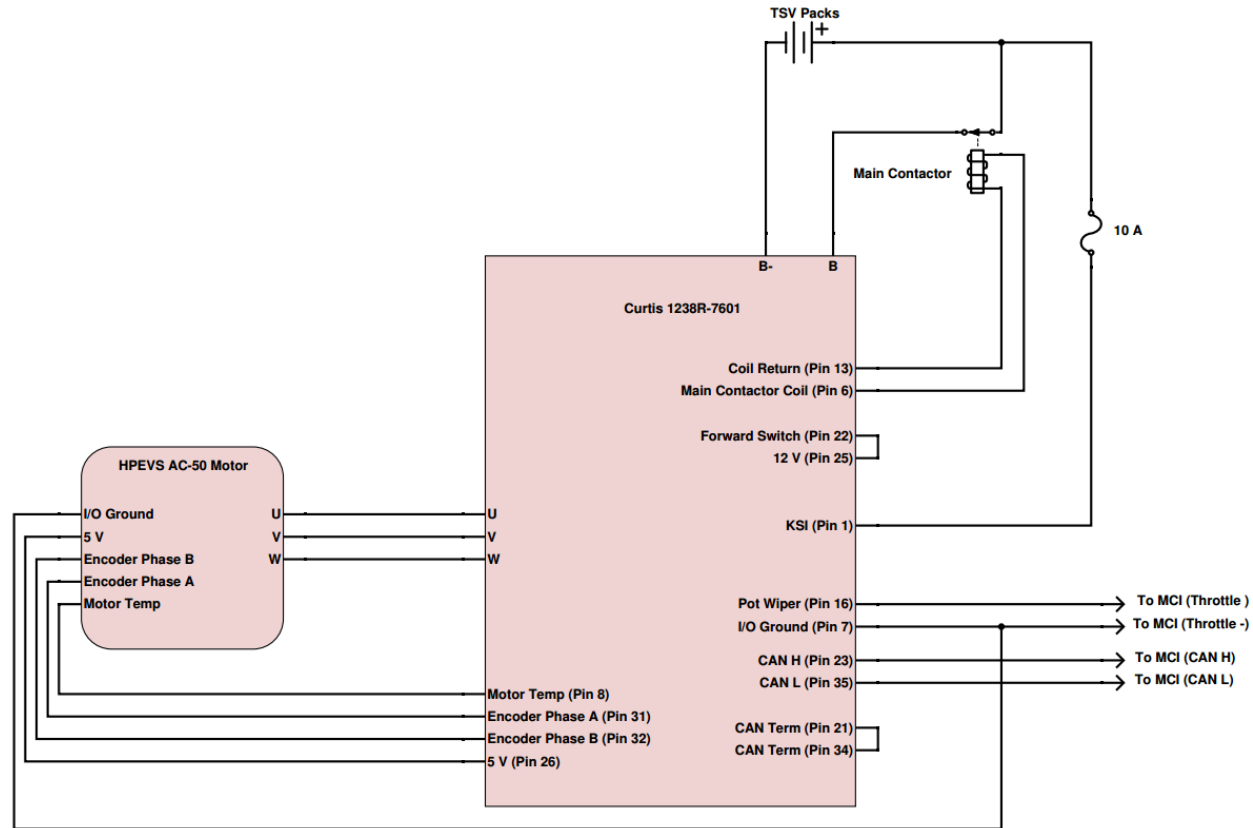


Figure 2. Motor and Motor Controller Connection Points

Top Level Dyno Wiring Diagram

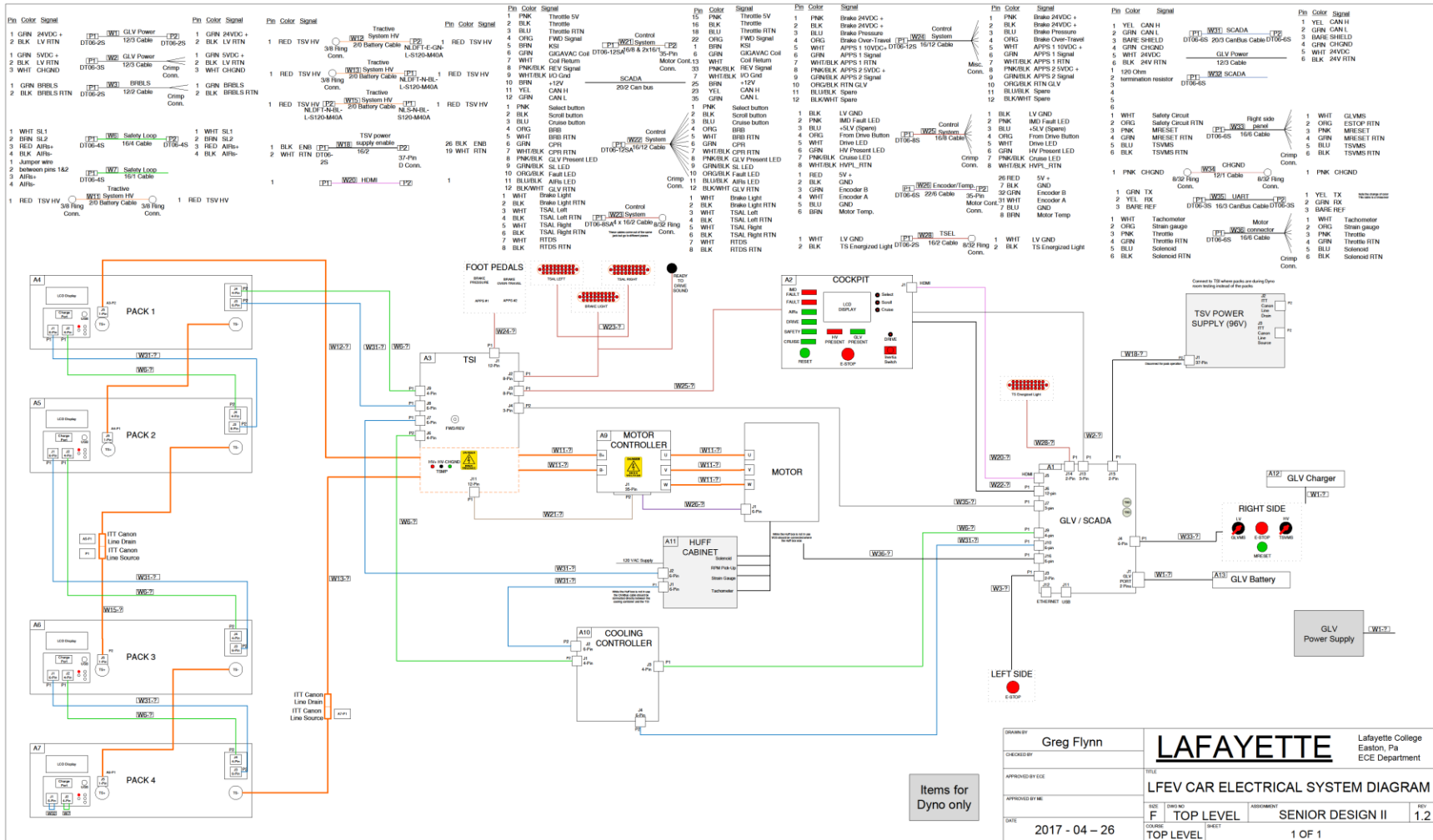


Figure 3: Overall Schematic of the Top Level of the Dyno / Overall Car System

Overall- what needs to be connected is the two Powerlock Connections from the either TSV or the Dyno Power Supply to the motor controller which in turn powers the motor. GLV contains VSCADA which connects to the rest of the system through a CANBus connection through DT connectors on the CANBus cables. GLV also has its own power supply which powers the GLV Safety Loop which connects to all of the subsystems – including TSV, TSI and VSCADA through DT connectors on the safety loop cables. The 35-pin connection off of the motor controller connects to the motor and TSI so that TSI can control the motor controller and motor. In the configuration in which TSI is disconnected – the Huff Box can also control the motor controller to allow you to run tests while bypassing the TSI connections.