LAFAYETTE
ELECTRICAL & COMPUTER ENGINEERING

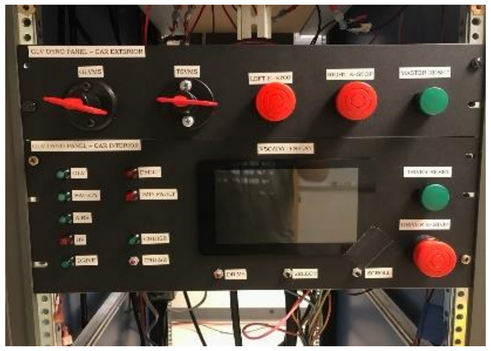
Formula Electric Vehicle

ECE 492- Spring 2017
Grounded Low Voltage (GLV)

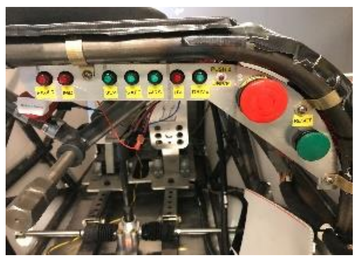
Project Website:
www.sites.Lafayette.edu/ece492-sp17
Engineers: Joe Sluke, Chris Bennett, Kyle Phillips

Vehicle User Interface (VUI)

Integrated Dyno Room



Integrated on Vehicle



Vehicle Computer Interface (VCI)

-Deliver CANBUS communication to Pi
-Deliver I2C communication line to Pi
-Provide GLV Battery State of Charge
-Provide safety loop monitoring

OVERVIEW

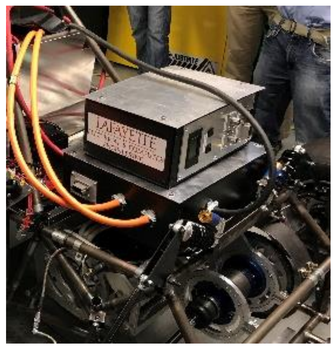
There are 4 main purposes of the Grounded Low Voltage (GLV) system:

GLV Power – Provide 24VDC to all subsystems
Safety Loop – Manage the power line to energize Accumulator Isolation Relays
Vehicle Computer Interface –Provide hardware for the Raspberry Pi to communicate with subsystems
Vehicle User Interface – Provide hardware for user interface of vehicle

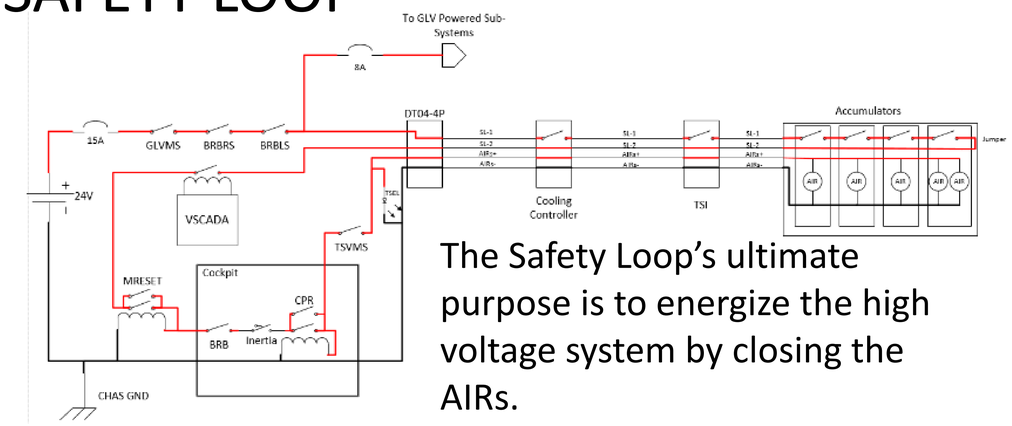
GLV Enclosure

Dyno Room

Vehicle



SAFETY LOOP



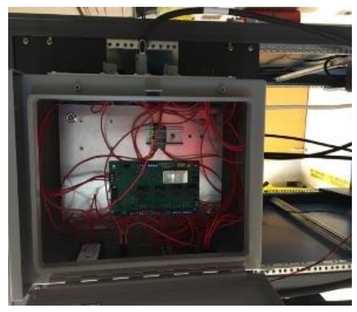
The Safety Loop's ultimate purpose is to energize the high voltage system by closing the AIRs.

GLV POWER

GLV Power provides 24VDC to the Cooling controller and TSI. Protected with a 15A and 8A circuit breakers

GLV BoB

-Safety Loop routing and relays
-GLV current and temp monitoring
-Provides 5V to Raspberry Pi
-ADC/DAC functionality



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