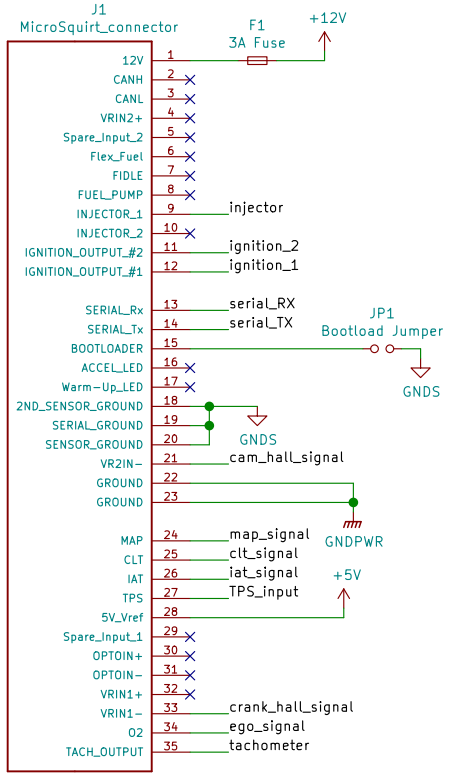
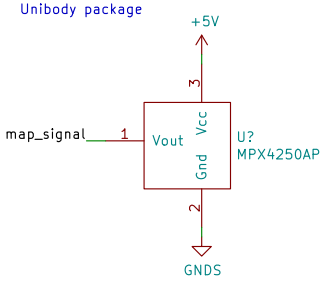
MicroSquirt

Connector to the MicroSquirt ECU. The Bootload jumper is to allow flashing new firmware. The connector must be wired with the same pinout as the MicroSquirt.



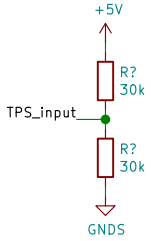
MAP sensor

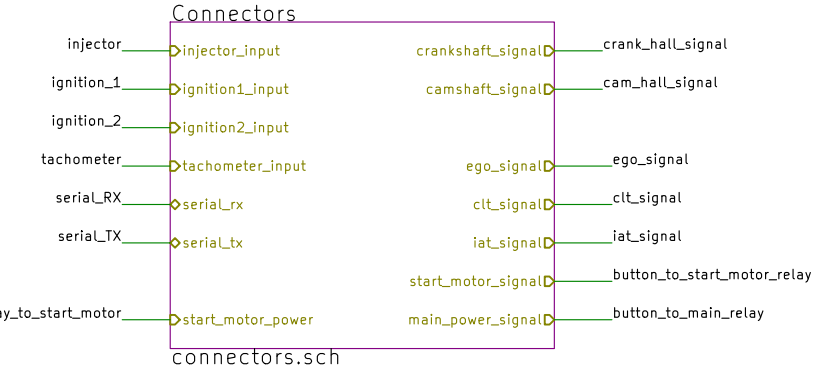
MAP Sensor Model: NXP MPX4250AP
Unibody package

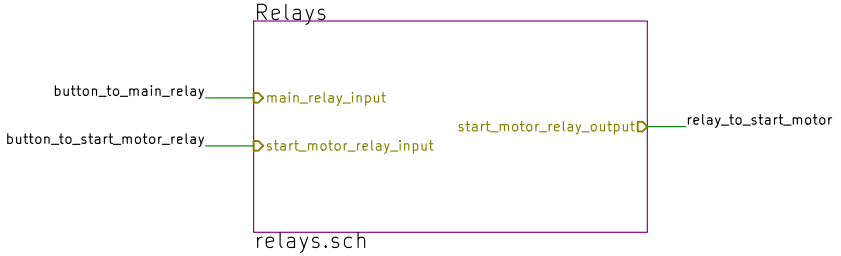


TPS

As Vera does not have a throttle the throttle position sensor input is given a constant input.







Designed by Erik Almbratt (erik.almbratt@gmail.com)
Chalmers Vera Team

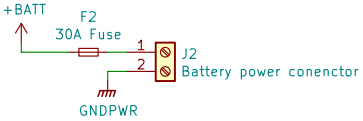
Sheet: /
File: ecu-board.sch

Title: Vera ECU Board

Size: A4	Date: 2019-02-04	**Rev: 0.1**
KiCad E.D.A. kicad 5.0.1		Id: 1/3

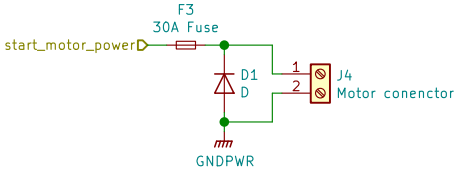
Battery

Battery power is only connected to the main power relay, as well as the normally open bistable power switch controlling said relay.



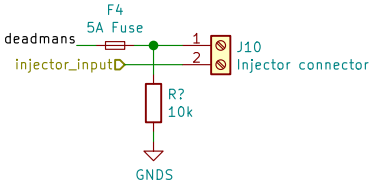
Start motor

The start motor power is switched by a normally open monostable switch.



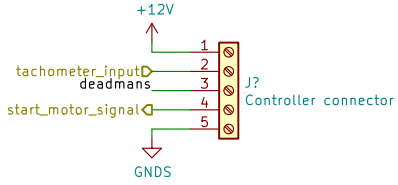
Injector

Injector input is switched by a normally open dead man's switch.



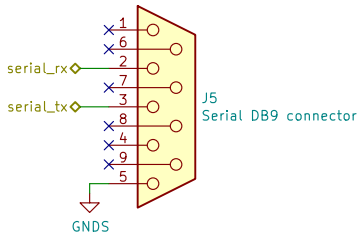
Start motor controller

Interface to a separate circuit which handles timing of start motor depending on engine RPM.

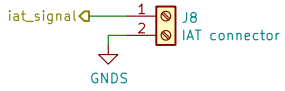


RS232 Serial Port

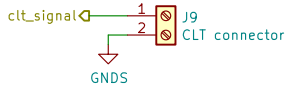
DB9 serial connector for mapping of MicroSquirt.



Intake Air Temperature

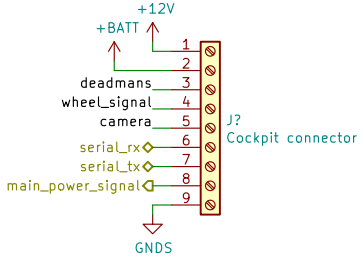


Motor Coolant Temperature

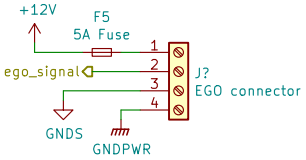


Cockpit connections

Connection to the Raspbery Pi based HMI. Button inputs for relay control of main power, starter motor and dead man's switch to injector.

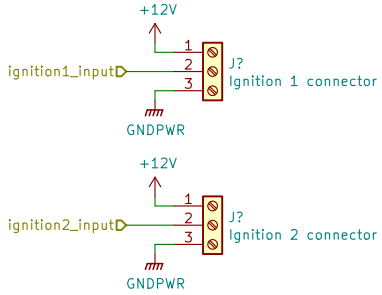


EGO Lambda sensor



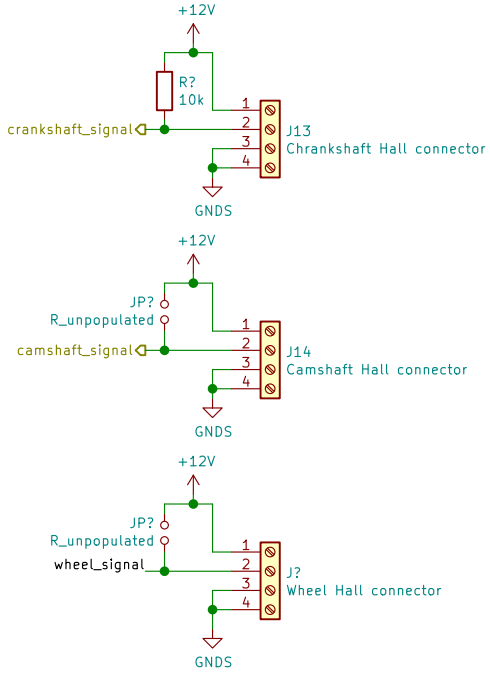
Ignition

The electrical system is designed to function with either one or two ignition coils. Currently it is only using Ignition 1.



Hall sensors

Hall Sensor Model: Littlefuse 55110-3M-03-A
Crankshaft Sensor: CYKN8-02CL0
Second ground is for potential shielding.
Jumpers enable using other hall sensors.

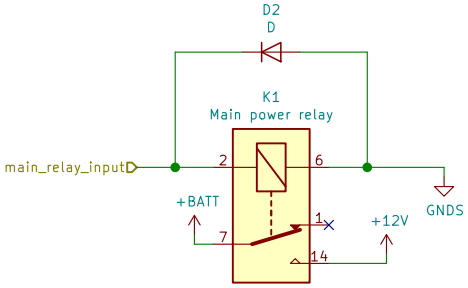


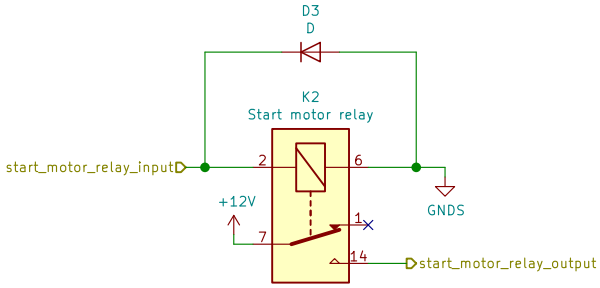
Designed by Erik Almbratt (erik.almbratt@gmail.com)
Chalmers Vera Team

Sheet: /Connectors/
File: connectors.sch

Title: Connectors

Size: A4	Date: 2019-02-04	**Rev: 0.1**
KiCad E.D.A. kicad 5.0.1		Id: 2/3





Designed by Erik Almbratt (erik.almbratt@gmail.com)
Chalmers Vera Team

Sheet: /Relays/
File: relays.sch

Title: Relays

Size: A4	Date: 2019-02-04	**Rev: 0.1**
KiCad E.D.A. kicad 5.0.1		Id: 3/3