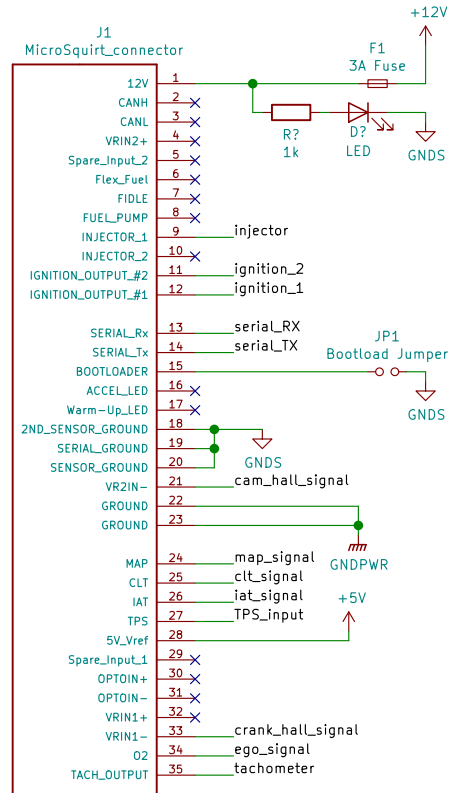


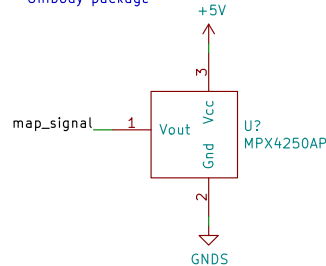
MicroSquirt

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.



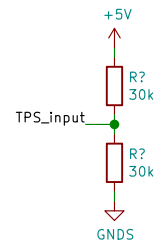
MAP sensor

MAP Sensor Model: NXP MPX4250AP
Unibody package

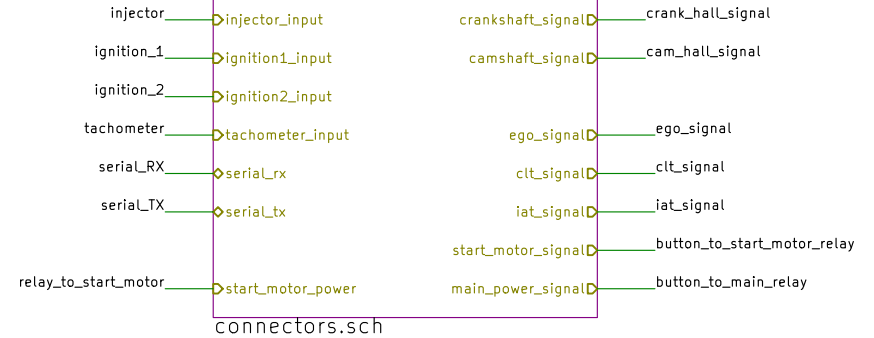


TPS

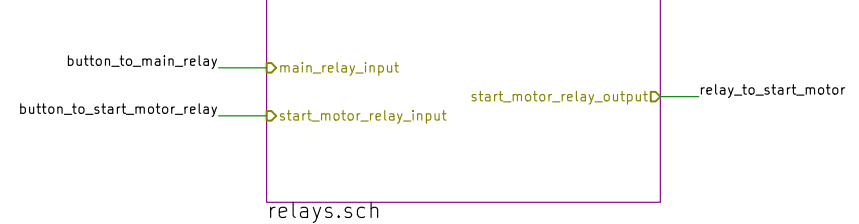
As Vera does not have a throttle the throttle position sensor input is given a constant input.



Connectors



Relays



Designed by Erik Albratt (erik.albratt@gmail.com)
Chalmers Vera Team

Sheet: /
File: ecu-board.sch

Title: Vera ECU Board

Size: A4 Date: 2019-02-04

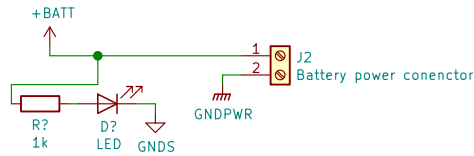
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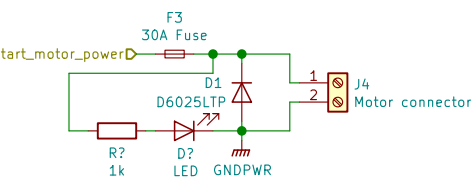
Battery

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



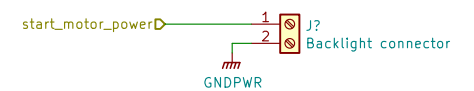
Start motor

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



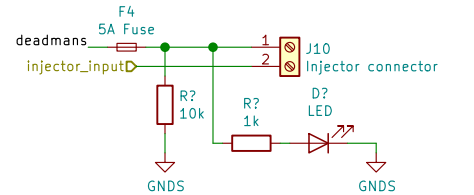
Backlight

The backlight is lit at all times the start motor is powered.



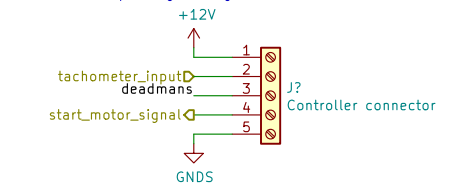
Injector

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



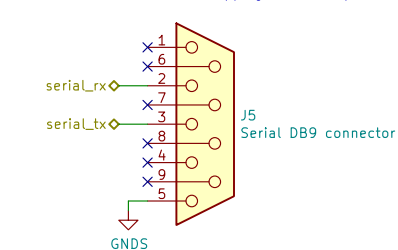
Start motor controller

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

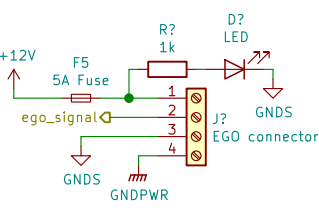


RS232 Serial Port

DB9 serial connector for mapping of MicroSquirt.

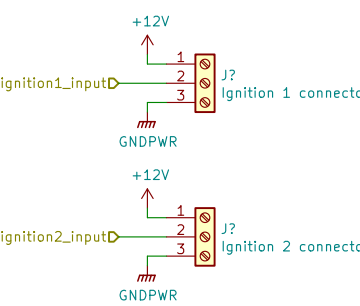


EGO Lambda sensor

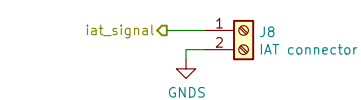


Ignition

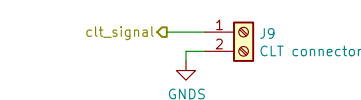
The electrical system is designed to function with either one or two ignition coils. Currently it is only using Ignition 1.



Intake Air Temperature

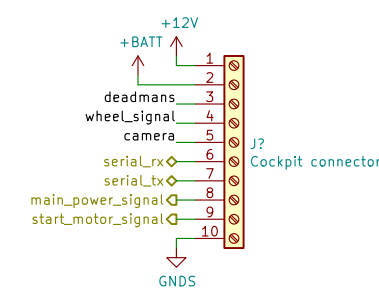


Motor Coolant Temperature



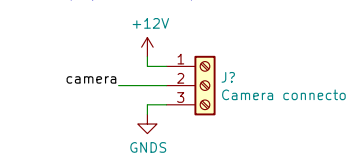
Cockpit connections

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



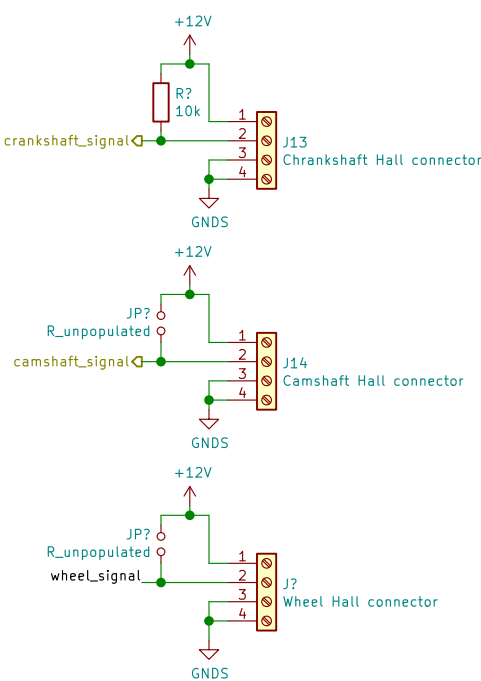
Camera

The back camera is connected by RCA to the LCD display in the cockpit.



Hall sensors

Hall Sensor Model: Littlefuse 55110-3M-03-A
Crankshaft Sensor: CYKNB-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

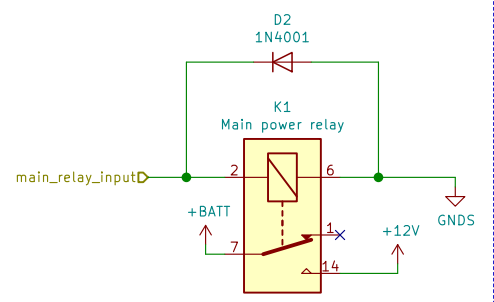
Size: A3 Date: 2019-02-04

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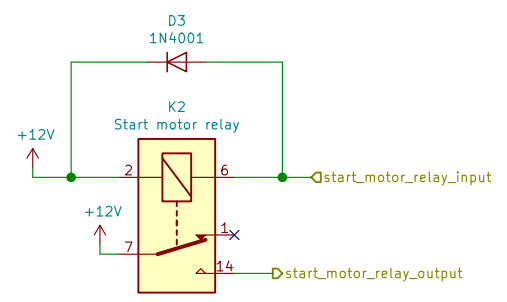
Rev: 0.1

Id: 2/3

Main power relay



Start motor relay



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Sheet: /Relays/
File: relays.sch

Title: Relays

Size: A4 Date: 2019-02-04
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Rev: 0.1
Id: 3/3