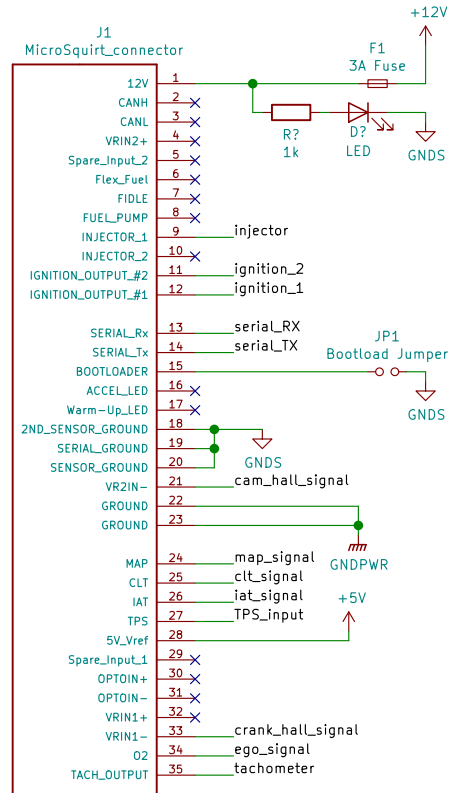


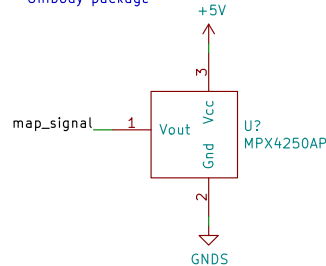
## MicroSquirt

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.



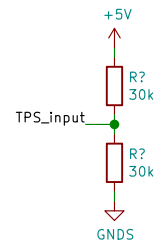
## MAP sensor

MAP Sensor Model: NXP MPX4250AP  
Unibody package

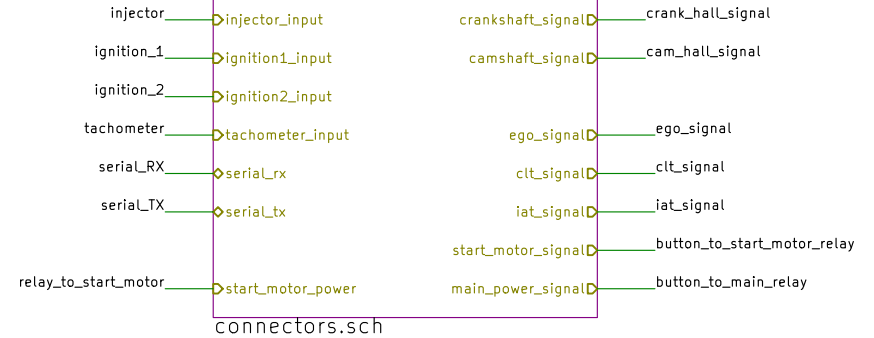


## TPS

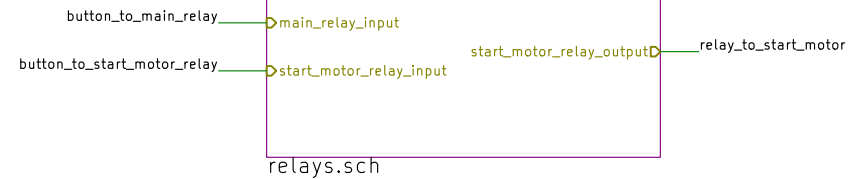
As Vera does not have a throttle the throttle position sensor input is given a constant input.



## Connectors



## Relays



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

Sheet: /  
File: ecu-board.sch

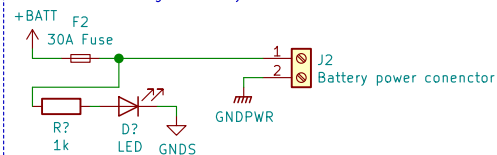
## Title: Vera ECU Board

Size: A4 Date: 2019-02-04  
KiCad E.D.A. kicad 5.1.1

Rev: 0.1  
Id: 1/3

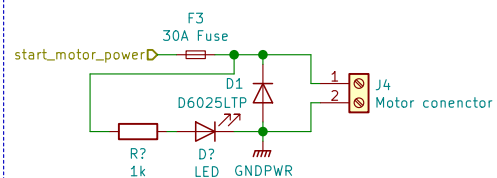
## Battery

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



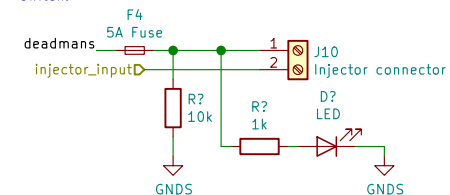
## Start motor

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



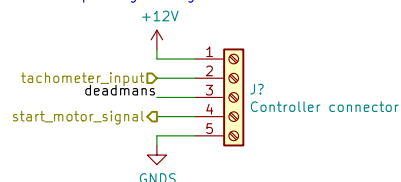
## Injector

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



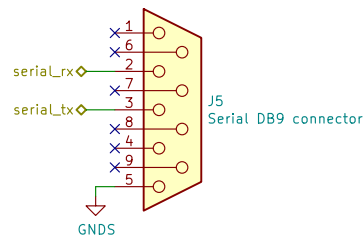
## Start motor controller

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

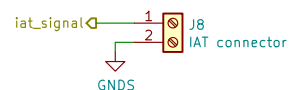


## RS232 Serial Port

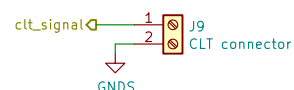
DB9 serial connector for mapping of MicroSquirt.



## Intake Air Temperature

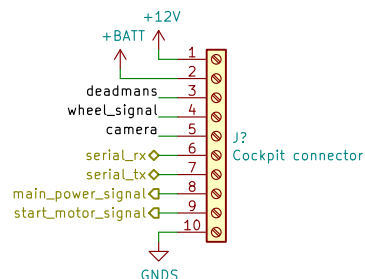


## Motor Coolant Temperature

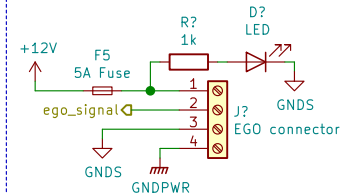


## Cockpit connections

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

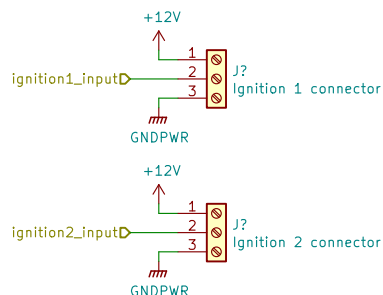


## EGO Lambda sensor



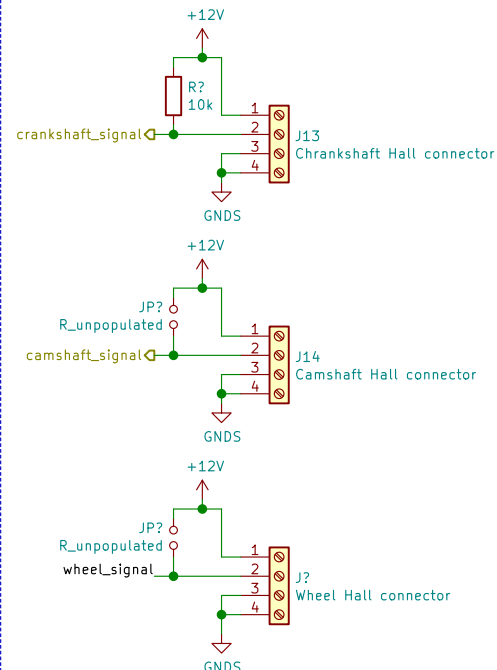
## Ignition

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: CYKN8-02CLO  
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

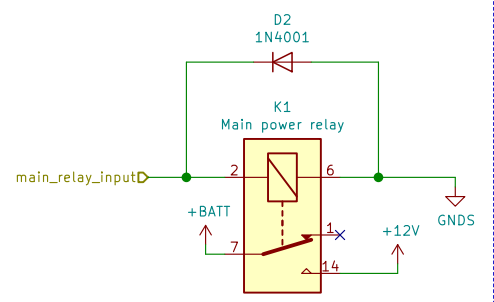
Size: A4 Date: 2019-02-04

KiCad E.D.A. kicad 5.1.1

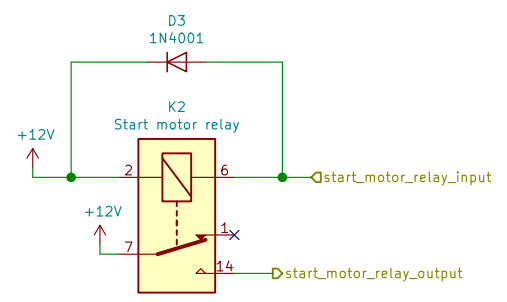
Rev: 0.1

Id: 2/3

### Main power relay



### Start motor relay



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

**Chalmers Vera Team**

Sheet: /Relays/

File: relays.sch

**Title: Relays**

Size: A4 Date: 2019-02-04

KiCad E.D.A. kicad 5.1.1

**Rev: 0.1**

Id: 3/3